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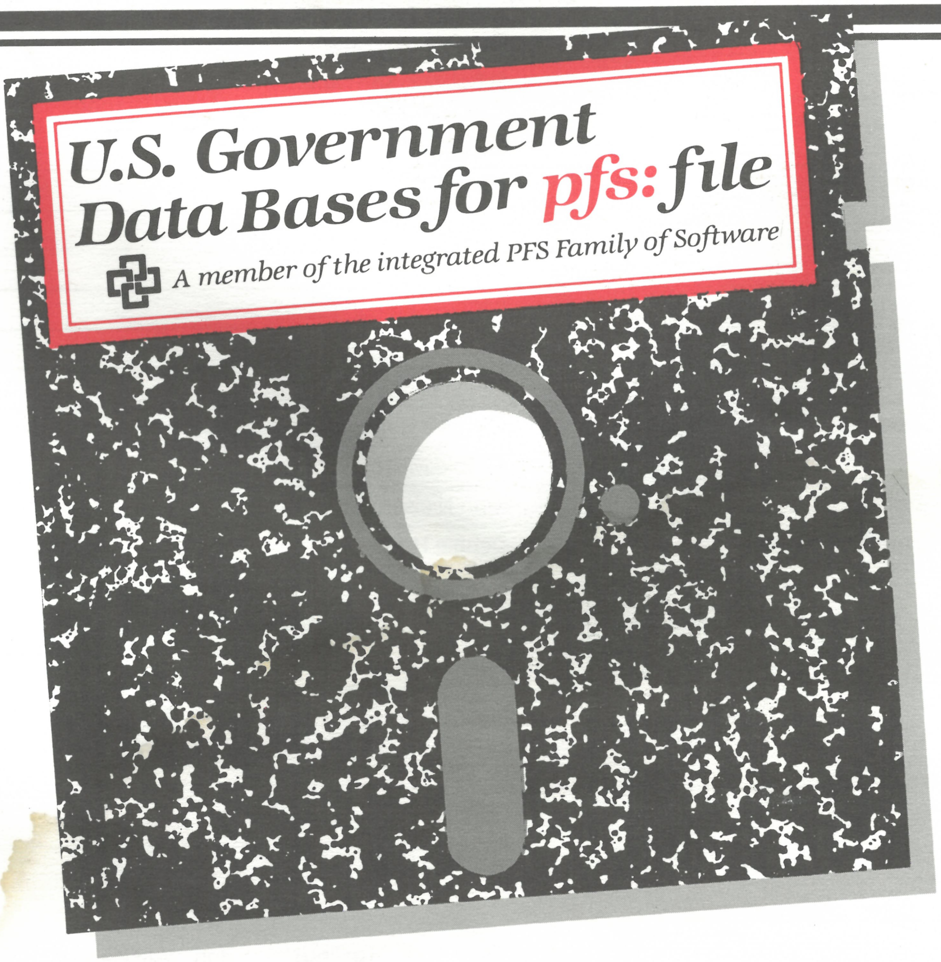

U.S. Government Data Bases for pfs:file

A member of the integrated PFS Family of Software

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Scholastic pfs®: U.S. Government Data Bases

Introduction

INTRODUCTION

Scholastic PFS: U.S. Government Data Bases provide an exciting new approach to the study of the United States government. The core of the package consists of five curriculum activity units. Three of the units teach students to use the included data files, and two others teach students to build their own files. Each unit helps students to develop both data base and social studies skills. Most importantly, the units help students become more active in their study of United States government, as they learn to develop and test their own hypotheses about trends over time and relationships among people, political parties, and events.

The units in the Using Files series are:

- Elections
- Federal Spending
- Constitutional Convention

The units in the Creating Files series are:

- Local Government
- State Government

To get started in this new and exciting way of learning and teaching government, first read the rest of this introduction, and then turn to the Teaching Guide.

Who This Package Is For

This package is designed for students in grades six through twelve in U.S. Government courses. It is also useful in courses that teach data base management skills.

The activities are written at about a sixth grade level and do not assume a high level of content expertise. Both the units and data files have been designed for a wide range of ages and skills. Within each unit, the activities become progressively more difficult, so that younger students may not complete the units, while older ones may move quickly to the more open-ended activities at the end of each unit. Similarly, some aspects of the data files will appeal to younger students, and some to older ones.

The Purpose of This Package

This package is intended to help students become more creative in their approach to studying government. The units and data files should help students become more actively involved in organizing, retrieving, and interpreting government data, perhaps in ways that no one else has thought of before. In addition, the students will learn and apply skills in retrieving information from computerized files and in building their own files.

What You'll Need

In addition to the material in this package, you will need the following computer equipment and software:

- Apple® *II*e or IIc computer
- At least one disk drive per computer (Two are recommended for some activities.)
- A printer
- *PFS: File* for the Apple *II*e and IIc. *File* enables the storing and retrieving of information using the computer. Some activities require *PFS: Report*, a program that helps you prepare attractive reports of the data stored using *File*.

If you have more than three computers available, you may want to order additional *Government* data file disks. Consult your order form for more information.

What This Package Contains

This package contains both software and printed materials.

Software

The software consists of three sets of two disks (a total of six disks). Each set of two disks contains the three *Government* data files. There are two files on one disk (one on each side). This disk has labels on both sides. The other disk, as indicated by the single label, contains one file. The labels should read:

Election

Fedspend

Constcon

Because *PFS* data disks cannot be used at all when write-protected, you must take some precautions to ensure that you always have one set of disks with the original file contents. It is very important that you read the section on Software Management in the Teaching Guide before you begin using the disks.

Written Materials
The printed material includes these sections: Using Files, Creating Files, Teaching Guide, Quick Guide, Mini-References for *File* and *Report*, Glossary and Appendices.

Using Files
This section includes units on using the *Election*, *Fedspend*, and *Constcon* data files that are on your disks.

Creating Files
This section contains two units on building your own data files. File designs are included for a *Local* (government) file and a *State* (government) file.

Teaching Guide
The Teaching Guide further describes the contents of this package, advises on how best to use it in the classroom, and includes scope and sequence charts. Additional teaching materials precede each unit. These describe the unit in detail, and include activity-by-activity lesson plans.

The Quick Guide
The Quick Guide should be copied and distributed to students. It contains important facts about the use of *File*.

The File/Report *Mini-References*
The Mini-References explain step-by-step the various procedures used in *File* and *Report*.

The Glossary
The Glossary defines words associated with the use of computer data bases, such as "file" and "Retrieve Spec."

The Appendices
The Appendices contain explanations of error messages that may occur when using *File* and *Report*. It also contains troubleshooting information.

About Computerized Data Files
A file is an organized collection of information on a particular subject, stored on a disk. Data files differ from other storage media in that you can have the computer organize and present the stored information in exactly the way you want to think about and use it. You and your students can actively take charge of the information in ways that are not possible when you read a textbook or look something up in an encyclopedia. Most people find that information becomes much more interesting when they "take charge" of it in these ways.

Another important characteristic of computer data files is that their contents can be easily changed. You can add, delete, or modify information in the files. This means that, in contrast with computer-assisted instruction programs you may have used in the past, computer data files are easily tailored to meet your particular curriculum and teaching objectives.

Scholastic pfs®: U.S. Government Data Bases

Teaching Guide

INTRODUCTION

Welcome to the *Scholastic PFS: U.S. Government Data Bases.*

Five curriculum activity units form the heart of this package. Each unit covers a major curriculum area in American government, and has been extensively field-tested in upper elementary schools and junior and senior high schools. Three of the units teach students to use the data files in this package. The remaining two teach them to build their own files, based on the file designs included in the units.

These units will teach students to become active participants in the study of government. They will be able to "take charge" of the information in the data files in order to study relationships among people, political parties, and events in American government. They will be able to conduct research projects, look for trends, and evaluate hypotheses in ways that were never before possible in the classroom. And they will develop the research and information-handling skills that will enable them to take advantage of the technology that is so much a part of our world.

This teaching guide provides both comprehensive and detailed information on how to use the three data files and five curriculum activity units in this package. Additional teaching materials will be found at the beginning of each unit.

Exploring a data base can be an adventure. You and your students can be as adventuresome and creative as you wish. Enjoy your journey into the world of government with the *Scholastic PFS: U.S. Government Data Bases.*

WHAT'S IN THIS PACKAGE

Data Files on Disk

The government data bases consist of three data files. Each data file is stored on one side of a disk. You'll find two files on one disk, and one file on another. You should have three sets of these disks altogether. The names of the files, and the corresponding units in the Using Files series, are:

1. *Election* (for use with the Elections unit)
2. *Fedspend* (for use with the Federal Spending unit)
3. *Constcon* (for use with the Constitutional Convention unit)

Each file is the subject of one of three curriculum activity units in the Using Files series.

Teaching Materials

Teaching materials appear in this teaching guide and also at the beginning of each curriculum activity unit. In this teaching guide you'll find:

- descriptions of package contents.
- classroom management tips.
- teaching tips.
- software management tips.
- content overview of the data files.
- social studies and data base scope and sequence charts.

At the start of each unit, you'll find:

- a description of the file contents.
- a list of curriculum areas covered.
- an activity-by-activity lesson plan chart.
- information similar to that found in this teaching guide, but specific to the particular unit.

Student Materials

The five curriculum activity units in this package teach students how to use the data files and how to build their own. Each unit covers a different area in the government curriculum, and teaches both data base and social studies skills. The rest of this package consists of support materials for these units: the Quick Guide, *File* and *Report Mini-References*, the Glossary, and Appendices.

Government Curriculum Units

The five curriculum units are divided into two series: Using Files and Creating Files.

Using Files Series

Units in the Using Files series are based on the data files on your disks. These units teach students how to use the computer to solve problems, answer questions pertaining to government, and develop inquiry skills. These units also show students how to maintain and improve data files by updating and adding data, and how to create new files which focus more closely on a specific aspect of the parent file.

For each unit, you have:

- one master data file on disk.
- two copies of the master data file on disk.
- one unit containing between eight and eleven activities based on the file.
- teaching materials, including an activity-by-activity lesson plan chart.

The first unit your class works on should come from this Using Files series. The three units are:

ELECTIONS. The *Election* file contains data on American Presidential and congressional elections, voter participation, and campaign spending and issues, from 1789 through 1984.

FEDERAL SPENDING. The *Fedspend* file contains information on federal budgets including debt, income, spending, and allocations to each Federal Agency and Department, since 1930.

CONSTITUTIONAL CONVENTION. The *Constcon* file includes information on 55 delegates to the Constitutional Convention of 1789. The activities show you how to use the *Constcon* file in a role-playing simulation of the Convention.

Creating Files Series

Units in the Creating Files series teach students to build their own files. In so doing, students will sharpen their social studies research skills and learn data base skills from the ground up.

Units in the Creating Files series are somewhat more advanced than units in the Using Files series. Before your class tries one, have them first work on a unit from the Using Files series. Units in the Creating Files series require more preparation and management on your part. For more information, refer to the teaching materials for one of the units. The units in the Creating Files series are:

LOCAL GOVERNMENT. Students create and use a file of information on the local government of your city, town, or county. They gather information about key officials and their influence on your community. This is a good unit of study for teaching students research skills, and will allow the class to become better informed about the people and laws governing their lives.

STATE GOVERNMENT. Students create and use a file of information about state governments. This unit is especially useful for giving students perspective on variations within the American political system.

For each unit in the Creating Files series, you have:

- one file design, on paper.
- a unit containing between eight and eleven activities that teach students to construct a file.
- teaching materials, including an activity-by-activity lesson plan chart.

Quick Guide

The Quick Guide contains the most frequently used procedures in *File*, along with important hints and cautions. Copy this guide and distribute it to all students.

Mini-References

Two Mini-References, one for *PFS: File* and one for *PFS: Report*, provide step-by-step procedures for using the functions in each of those programs. Although the Mini-References can be used to teach students how to use *File* and *Report*, they are primarily intended for people already familiar with the software, who simply need to refresh their memory about a particular procedure.

Glossary

The Glossary explains the important terms and unavoidable "computerese" that students will encounter. This too should be copied and distributed.

Appendices

The Appendices contain valuable technical information.

How To Start

Before you begin any of the curriculum activity units, you should understand the basics of computerized information handling in general, and have a working knowledge of *File* in particular. You may want to read the section in the introduction to this package that discusses data files. And if you need to learn more about *File*, work through the learning activities in the *Scholastic PFS: File* package; if you don't have them, work through a unit in the Using Files series. The *Election* unit is a good choice.

Once you have a feel for what *PFS* data files are all about, read the rest of the Teaching Guide carefully, particularly the Software Management section. You'll learn how to ensure that students don't destroy vital data, and that the disks they use always contain accurate information.

Now you're ready to choose a unit from the Using Files series for your class to work on. The following chart outlines the curriculum areas covered by each unit, and the characteristics of each file. You may also want to refer to the social studies and computing scope and sequence charts at the end of the Teaching Guide.

UNIT CONTENT CHART

Government Unit (and file name)	**Government topics covered**		**Characteristics of file**
Elections (*Election*)	elections Presidency Congress	electoral college campaigning political parties	Presidential election results from 1789 through 1984 congressional election results from 1860 campaign issues and strategies for each Presidential candidate voting by demographic groups
Federal Spending (*Fedspend*)	budget government agencies	government income government expenditures	yearly data 1920-1984 federal department and agency spending
Constitutional Convention (*Constcon*)	U.S. Constitution checks and balances	Founding Fathers states' rights	role-playing simulation role played at convention by 55 delegates biographical data on 55 delegates background data on states
State Government (*Stategov*)	law current events		state governing bodies ages for voting, driving, marrying, etc. criminal justice statistics
Local Government (*Local*)	local officials local organizations		local governments by place official duties services provided by local organizations meeting times

Classroom Management

Assign each student a partner that he or she will work with for an entire unit.

This package includes three copies of each file. If you have more than three computers, you may want more disks. You can purchase copies of the data files from Scholastic Inc. See the order form included in the package.

How you introduce, prepare for, and conduct the activities depends partly on the number of computers your students may use. Teachers have taught their students very successfully with only one computer available. Of course, the whole class will learn faster if there are more machines. Regardless of your hardware setup, you should always do the following before beginning a new activity:

- work through the activity to familiarize yourself with what students will be doing.
- introduce the activity to the class. Use a video projection unit or a large screen monitor if possible. You may want to ask some students to help prepare or do the demonstration.
- make copies of the activity and distribute them to student pairs.
- schedule time on the computer for each student pair. Allot at least as much time as is indicated by the activity-by-activity lesson plan charts, and remember that some students will require more time than others. Many activities require planning away from the computer, so some students can plan at their desks while others use the computer.
- copy the master file disk onto the working copies, so your students have correct data.

Before, during, or after each activity, you might allow some time for students to demonstrate their work to the whole class or to small groups.

Homework

Several activities involve planning away from the computer. You can assign this planning as homework, and have students continue with the computer part of the lesson in class.

Materials in the Classroom or Lab

Students will need to refer to various materials aside from the activities. Therefore, you should:

- make copies of the Quick Guide and distribute them to students.
- place the *File* and *Report* Mini-References where all students can find them.
- have students display their printouts on the wall, so they can compare results and learn from each other's work.

Assessing Student Progress

Students will master the skills and concepts in these activities at their own pace. Here are some suggestions for checking on their progress.

- For each activity, select an exercise or question to monitor, and have students turn in their printouts, or their worksheets for planning printouts.
- Have students routinely complete a progress checklist for each activity.

Providing for Individual Needs

Try to arrange the computer schedule to allow slower students the extra time they need to understand the concepts and practice the skills. Try pairing them with classmates who are especially helpful peer tutors (not necessarily the computer "whiz kids").

Give the more advanced students useful chores to do that will teach them more about managing data files and computer systems. For example, you might have them:

- make backup copies of the data disks.
- manage the disk library.
- keep disk labels accurate and up-to-date.
- set up bulletin board displays of student printouts.
- design files of information about the computer schedules or other administrative data.
- assist other students with debugging.
- assist you during demonstrations.

SOFTWARE MANAGEMENT

Data on *File* data disks can easily be modified, added, or deleted. This is a great strength of the program, but also a potential nuisance: careless or mischievous students may lose or destroy data. Fortunately, you can institute simple procedures that will guarantee you always have a clean copy of each file on hand.

The first thing you should do is to turn one copy of each file into a "master" by protecting it with write-protect tabs. Use as many tabs as there are notches on the disks (one or two). Keep the master disks in a safe place and never use them. This way, you'll always have one copy of each file in mint condition. Before you safeguard a master file, copy it once so that you will still have three "working" copies of the file. To make copies, use the COPY function of *File*, or a standard commercial copy program.

Students should use the three "working" copies of each file. Normally, after students finish a session on the computer, you should copy the contents of the master disk back onto the working copies. In this way, you ensure that students begin each new session with the correct data. However, you may not always want to do that. For example, if students have updated data or added forms to a file, you may want to retain the file in its new form. You should also remember that if you copy over an entire disk, you will lose any Pre-defined Print Specs on that disk. To avoid this, you could use the Copy Selected Forms option.

It is most important that you tell students NEVER to remove a data disk from the drive unless the PFS: File Function Menu is on the screen. Withdrawing a disk or turning off the computer at any time may scramble the contents of the disk.

Tell students that an important part of learning about computer data files is learning to care for them responsibly. Ask students always to look closely at their printouts with an eye to whether the data makes sense, or whether an unexpected result suggests that the data on the disk has been unintentionally altered. And when students build their own data files, make sure they cross-check each other's accuracy. The activities in the Creating Files units provide some of these procedures.

Teaching Tips

- You can tailor the learning experience to your curriculum by asking students to solve problems that are closely related to your own teaching objectives.
- The activities give the students step-by-step procedures for solving the sample questions listed in the activities. However, it's best for the students to be gradually weaned away from dependence on the step-by-step procedures. For example, they should learn how to set up a Pre-defined Print Spec on their own.
- Encourage students to experiment by making up their own questions and retrieve specs. They will learn a lot by debugging their mistakes, rather than getting everything "right" the first time.
- Encourage students to look up information and procedures in the *File* Mini-Reference when they don't know how to do something. The ability to use reference manuals is a very useful skill in the world of computers and information systems.

Government
Scope and Sequence Charts
Elections

I = Skill Introduced
P = Skill Practiced
A = Skill Applied

Skills	Activity								
DETERMINE INFORMATION NEEDS	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Analyze Problem				I	P	P	A	A	A
Break Problem into Subproblems				I	P	P	A	A	A
Develop Hypothesis					I	P	A	A	A
Decide on Data Needed to Answer Question		I	P	P	P	P	A	A	A
Interpret Data		I	P	P	P	P	A	A	A
RETRIEVE INFORMATION									
Explore a File	I	P	P						
Type Retrieve Specs	I	P	P						A
Set Up Retrieve Specs			I	A	A	A	A	A	A
Narrow the Search			I	P	P	P	P		
Print Using Pre-defined Print Spec				I	P				A
Choose Retrieve Spec for Printout				I	P				A
Choose Data Sequence for Printout				I	P				A
Plan Data Items for Printout				I	P				A
Set Up Print Spec				I	P				A
Test/Debug Printout					I				A
Revise Print Spec					I				A
Interpret Printout				I	P				A

PREPARE REPORTS

Set Up Report Spec						I	P		A
Set New Headings						I	P		A
Fill In Report Options						I	P		A
Set Up Retrieve Spec for Report						I	P		A
Set Up Pre-defined Report Spec						I	P		A
Print Report						I	P		A
Define Derived Column							I		A
Interpret Report						I	P		A
Graph Data								I	A
BUILD FILES									
Plan the Research									
Locate Sources of Information									
Print Blank Forms									
Collect Data									
Check Accuracy of Data									
Update Existing Forms									
Add New Forms to File									
Copy File Disk									
Copy Selected Forms									

Government
Scope and Sequence Charts
Federal Spending

I = Skill Introduced
P = Skill Practiced
A = Skill Applied

Skills					Activity					
DETERMINE INFORMATION NEEDS	1	2	3	4	5	6	7	8	9	10
Analyze Problem				I	P	A	A	A	A	A
Break Problem into Subproblems				I	P	A	A	A	A	A
Develop Hypothesis						I	P	A		A
Decide on Data Needed to Answer Question			I	P	P	A	A	A	A	A
Interpret Data	I	P	P	P	P	A	A	A	A	A
RETRIEVE INFORMATION										
Explore a File		I								
Type Retrieve Specs	I	P	P	A	A	A	A	A	A	A
Set Up Retrieve Specs		I	P	P	P	A	A	A	A	A
Narrow the Search			I	P	P	A	A	A	A	A
Print Using Pre-defined Print Spec				I	P	A				A
Choose Retrieve Spec for Printout				I	P	A				A
Choose Data Sequence for Printout				I	P	A				A
Plan Data Items for Printout				I	P	A				A
Set Up Print Spec				I	P	A				A
Test/Debug Printout					I	P				A
Revise Print Spec										
Interpret Printout				I	P	P				A

PREPARE REPORTS

Set Up Report Spec							I	P		A
Set New Headings							I	P		A
Fill In Report Options							I	P		A
Set Up Retrieve Spec for Report							I	P		A
Set Up Pre-defined Report Spec							I	P		A
Print Report							I	P		A
Define Derived Column								I		A
Interpret Report							I	P		A
Graph Data									I	A
BUILD FILES										
Plan the Research										
Locate Sources of Information										
Print Blank Forms										
Collect Data										
Check Accuracy of Data										
Update Existing Forms										
Add New Forms to File										
Copy File Disk										
Copy Selected Forms										

Government
Scope and Sequence Charts
Constitutional Convention

I = Skill Introduced
P = Skill Practiced
A = Skill Applied

Skills **DETERMINE INFORMATION NEEDS**	1	2	3	4	5	Activity 6	7	8	9	10	11
Analyze Problem					I	P	P	P			A
Break Problem into Subproblems					I	P	P	P			A
Develop Hypothesis											
Decide on Data Needed to Answer Question			I		I	P	P	P		P	A
Interpret Data					I	P	P	P		P	A
RETRIEVE INFORMATION											
Explore a File	I										
Type Retrieve Specs	I	P	P	P	P	P	P	P	P	P	A
Set Up Retrieve Specs	I	P	P	P	P	P	P	P	P	P	A
Narrow the Search		I									
Print a Form		I									
Print Using Pre-defined Print Spec			I		P	P	P	P		P	A
Choose Retrieve Spec for Printout			I		P	P	P	P		P	A
Choose Data Sequence for Printout			I		P	P	P	P		P	A
Plan Data Items for Printout			I		P	P	P	P		P	A
Set Up Print Spec			I		P	P	P	P		P	A
Test/Debug Printout			I		P	P	P	P		P	A
Revise Print Spec			I		P	P	P	P		P	A

PREPARE REPORTS

Set Up Report Spec											
Set New Headings											
Fill In Report Options											
Set Up Retrieve Spec for Report											
Set Up Pre-defined Report Spec											
Print Report											
Define Derived Column											
Interpret Report											
Graph Data											

BUILD FILES

Plan the Research											
Locate Sources of Information											
Print Blank Forms											
Collect Data											
Check Accuracy of Data											
Update Existing Forms		I		P	P	P	P	P	P	P	
Add New Forms to File											
Copy File Disk											
Copy Selected Forms											

Government
Scope and Sequence Charts
Local Government

I = Skill Introduced
P = Skill Practiced
A = Skill Applied

Skills	Activity								
DETERMINE INFORMATION NEEDS	1	2	3	4	5	6	7	8	9
Analyze Problem					I			A	
Break Problem into Subproblems									
Develop Hypothesis									
Decide on Data Needed to Answer Question					I			A	
Interpret Data						I	P	A	
RETRIEVE INFORMATION									
Explore a File									
Type Retrieve Specs						A		A	
Set Up Retrieve Specs						A		A	
Narrow the Search						A		A	
Print Using Pre-defined Print Spec						A		A	
Choose Retrieve Spec for Printout					I			A	
Choose Data Sequence for Printout					I			A	
Plan Data Items for Printout					I			A	
Set Up Print Spec					I			A	
Test/Debug Printout									
Revise Print Spec									
Interpret Printout						I		A	

PREPARE REPORTS

Set Up Report Spec									
Set New Headings									
Fill In Report Options									
Set Up Retrieve Spec for Report									
Set Up Pre-defined Report Spec									
Print Report									
Define Derived Column									
Interpret Report									
Graph Data									

BUILD FILES

Plan the Research	I						P		
Locate Sources of Information	I						P		
Print Blank Forms	I						P		
Collect Data		I					P		
Check Accuracy of Data			I				P		
Update Existing Forms							I		
Add New Forms to File				I			P		
Copy File Disk									
Copy Selected Forms									

Government
Scope and Sequence Charts
State Government

I = Skill Introduced
P = Skill Practiced
A = Skill Applied

Skills

DETERMINE INFORMATION NEEDS	Activity 1	2	3	4	5	6	7	8	9
Analyze Problem					I			A	
Break Problem into Subproblems									
Develop Hypothesis									
Decide on Data Needed to Answer Question					I			A	
Interpret Data						I	P	A	
RETRIEVE INFORMATION									
Explore a File									
Type Retrieve Specs						A		A	
Set Up Retrieve Specs						A		A	
Narrow the Search						A		A	
Print Using Pre-defined Print Spec						A		A	
Choose Retrieve Spec for Printout					I			A	
Choose Data Sequence for Printout					I			A	
Plan Data Items for Printout					I			A	
Set Up Print Spec					I			A	
Test/Debug Printout									
Revise Print Spec									
Interpret Printout						I		A	

PREPARE REPORTS

Set Up Report Spec									
Set New Headings									
Fill In Report Options									
Set Up Retrieve Spec for Report									
Set Up Pre-defined Report Spec									
Print Report									
Define Derived Column									
Interpret Report									
Graph Data									
BUILD FILES									
Plan the Research	I					P			
Locate Sources of Information	I					P			
Print Blank Forms	I					P			
Collect Data		I				P			
Check Accuracy of Data			I			P			
Update Existing Forms						I			
Add New Forms to File				I		P			
Copy File Disk									
Copy Selected Forms									

Government Scope and Sequence Charts
Elections

I = Skill Introduced
P = Skill Practiced
A = Skill Applied

Skills	Activity										
RESEARCH AND ORGANIZE DATA	1	2	3	4	5	6	7	8	9	10	11
Discover main topics, key events, people, and trends	I	P	P	P	P	P	P	P	A		
Classify data into relevant categories		I	P	P	P	P	P	P	A		
Infer cause-and-effect relationships		I	P	P	P	P	P	P	A		
Define historical and social questions or problems			I	P	P	P	P	P	A		
Identify data needed to answer questions				I	P	P	P	P	A		
Use library references					I	P	P	P	A		
Sequence and organize data				I	P	P	P	P	A		
Analyze and interpret results of data collected				I	P	P	P	P	A		
Present a synthesis of research using a variety of formats							I	P	A		
ANALYZE AND RESEARCH DATA											
Validate collected data to ensure objectivity, technical correctness, and currency											
Estimate adequacy of information collected				I	P	P	P	P	A		
Discuss implications of research and propose additional hypotheses							I	P	A		
Propose course of action based on research results							I	P	P		
USE A COMPUTER											
Operate a computer to enter and retrieve information from a variety of sources	I	P	P	P	P	P	P	P	P		

Government Scope and Sequence Charts
Federal Spending

I = Skill Introduced
P = Skill Practiced
A = Skill Applied

Skills

	Activity										
RESEARCH AND ORGANIZE DATA	1	2	3	4	5	6	7	8	9	10	11
Discover main topics, key events, people, and trends	I	P	P	P	P	P	P	P	P	A	
Classify data into relevant categories		I	P	P	P	P	P	P	P	A	
Infer cause-and-effect relationships			I	P	P	P	P	P	P	A	
Define historical and social questions or problems			I	P	P	P	P	P	P	A	
Identify data needed to answer questions			I	P	P	P	P	P	P	A	
Use library references					I	P	P	P	P	A	
Sequence and organize data				I	P	P	P	P	P	A	
Analyze and interpret results of data collected				I	P	P	P	P	P	A	
Present a synthesis of research using a variety of formats						I	P	P	P	A	
ANALYZE AND RESEARCH DATA											
Validate collected data to ensure objectivity, technical correctness, and currency					I	P	P	P	P	A	
Estimate adequacy of information collected							I	P	P	A	
Discuss implications of research and propose additional hypotheses							I	P	P	A	
Propose course of action based on research results							I	P	P	A	
USE A COMPUTER											
Operate a computer to enter and retrieve information from a variety of sources	I	P	P	P	P	P	P	P	P	P	

Government Scope and Sequence Charts
Constitutional Convention

I = Skill Introduced
P = Skill Practiced
A = Skill Applied

Skills	Activity										
RESEARCH AND ORGANIZE DATA	1	2	3	4	5	6	7	8	9	10	11
Discover main topics, key events, people, and trends	I	P	P	P	P	P	P	P	P	A	A
Classify data into relevant categories	I	P	P	P	P	P	P	P	P	A	A
Infer cause-and-effect relationships			I	P	P	P	P	P	P	A	A
Define historical and social questions or problems			I	P	P	P	P	P	P	A	A
Identify data needed to answer questions			I	P	P	P	P	P	P	A	A
Use library references	I	P	P	P	P	P	P	P	P	A	A
Sequence and organize data			I	P	P	P	P	P	P	A	A
Analyze and interpret results of data collected					I	P	P	P	P	A	A
Present a synthesis of research using a variety of formats										I	A
ANALYZE AND RESEARCH DATA											
Validate collected data to ensure objectivity, technical correctness, and currency		I	P	P	P	P	P	P	P	A	A
Estimate adequacy of information collected			I	P	P	P	P	P	P	A	A
Discuss implications of research and propose additional hypotheses					I	P	P	P	P	A	A
Propose course of action based on research results					I	P	P	P	P	A	A
USE A COMPUTER											
Operate a computer to enter and retrieve information from a variety of sources	I	P	P	P	P	P	P	P	P	A	A

Government Scope and Sequence Charts
Local Government

I = Skill Introduced
P = Skill Practiced
A = Skill Applied

Skills

	Activity										
RESEARCH AND ORGANIZE DATA	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Discover main topics, key events, people, and trends	I	P			P	P	P	P			
Classify data into relevant categories	I	P			P	P	P	P			
Infer cause-and-effect relationships	I	P			P	P	P	P			
Define historical and social questions or problems	I	P			P	P		P			
Identify data needed to answer questions	I	P			P	P		P			
Use library references	I	P	P				P	P			
Sequence and organize data		I			P	P		P			
Analyze and interpret results of data collected						I		P			
Present a synthesis of research using a variety of formats						I		P			
ANALYZE AND RESEARCH DATA											
Validate collected data to ensure objectivity, technical correctness, and currency			I		P	P		P			
Estimate adequacy of information collected			I			P	P	P			
Discuss implications of research and propose additional hypotheses					P	P	P	P			
Propose course of action based on research results											
USE A COMPUTER											
Operate a computer to enter and retrieve information from a variety of sources				I	P	P	P	P			

Government Scope and Sequence Charts
State Government

I = Skill Introduced
P = Skill Practiced
A = Skill Applied

Skills	Activity										
RESEARCH AND ORGANIZE DATA	1	2	3	4	5	6	7	8	9	10	11
Discover main topics, key events, people, and trends	I	P			P	P	P	P			
Classify data into relevant categories	I	P			P	P	P	P			
Infer cause-and-effect relationships	I	P			P	P	P	P			
Define historical and social questions or problems	I	P			P	P		P			
Identify data needed to answer questions	I	P			P	P		P			
Use library references	I	P	P				P	P			
Sequence and organize data		I			P	P		P			
Analyze and interpret results of data collected						I		P			
Present a synthesis of research using a variety of formats						I		P			
ANALYZE AND RESEARCH DATA											
Validate collected data to ensure objectivity, technical correctness, and currency			I		P	P		P			
Estimate adequacy of information collected			I			P	P	P			
Discuss implications of research and propose additional hypotheses					P	P	P	P			
Propose course of action based on research results											
USE A COMPUTER											
Operate a computer to enter and retrieve information from a variety of sources				I	P	P	P	P			

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Constitutional Convention

CONSTITUTIONAL CONVENTION: LESSON PLANS

Overview

The activities in this unit will guide students through a role-playing simulation of the Constitutional Convention of 1787. The *Constcon* file supplies background information on the delegates whom students will role-play, and on the states the delegates represent.

The better your students understand the political and economic issues of 1787, the more they'll learn from this simulation. You can help. Explain, for example, that the Articles of Confederation were not strong enough to bind the states together; that the states shared a desire for a central government, but differed as to how strong that government should be, what duties it should perform, and how it should be structured. You might also want to talk about how slavery was already an issue dividing the states, and how economic concerns varied from region to region and state to state.

Key Topic Areas in Constitutional Convention

Major topics covered are the Founding Fathers, the United States Constitution, and the Separation of Powers.

Description of File Contents and Organization

The *Constcon* form on disk is six pages (screens) long. Each delegate's form is incomplete, to be filled in by students during the simulation. Figure A on page 7 shows the form.

Page 1

The first page shows the name of the DELEGATE, his STATE, and the ROLE he played at the Convention. There is also a place for the student to record whether or not he SIGNED the Constitution.

Page 2

This page contains data on the delegate's state DELEGATION, the state's POPULATION, number of SLAVES, NUMBER OF DELEGATES, and the PLAN FAVORED by the delegation.

On this page, students record the GOALS OF THE DELEGATION, as they interpret them, and the chairperson of each delegation records the official vote of the delegation on the proposals presented at the convention, such as the Virginia Plan. Each delegate also records the votes on his or her form.

Page 3

On Page 3 of the *Constcon* form are BIOGRAPHICAL DATA for the delegate, including his ROLE IN HISTORY. The student playing the role of this delegate enters his or her name on this page.

Page 4

The references used to gather the information contained in this file are on Page 4 of the form.

Page 5

Page 5 of the form provides BACKGROUND information on the states' reasons for coming to the Convention. Students will use this information in preparing their delegation's goals.

Page 6

Role-playing instructions appear on Page 6, and on attached pages if necessary.

Preparing for the Simulation

Delegate roles are selected or assigned in Activity 1. Because you probably have fewer students than there were delegates, you should make sure that all 26 delegates deemed to have played an "important role" are represented. If you have fewer than 26 students, the following 16 delegates crucial to the simulation should be selected first:

- Major William Jackson (Secretary to the Convention, not a delegate)

Virginia:
- George Washington (President and Chairman of the Convention)
- Edmund Randolph (presenter of the Virginia Plan)
- James Madison

Pennsylvania:
- James Wilson (reads Franklin's speech)
- Benjamin Franklin

South Carolina:
- Pierce Butler
- John Rutledge (staunch slavery advocate)

North Carolina:
- Hugh Williamson

Connecticut:
- Roger Sherman (presenter of the Connecticut Compromise)
- William S. Johnson

Delaware:
- John Dickinson

New Jersey:
- William Paterson (presenter of the New Jersey Plan)

Massachusetts:
- Nathaniel Gorham (alternate Chairman; if George Wythe is not present, Gorham should read the rules)

Maryland:
- Luther Martin

New York:
- Alexander Hamilton

New Hampshire and Georgia are not represented in this list of important delegates, because of the limited contributions made by their delegations. If you want to have all the states represented, have one student play New Hampshire's John Langdon, and another play Georgia's Abraham Baldwin.

The Convention is convened in Activity 3. Have students wear nametags to identify themselves. George Washington will chair the convention. He cannot vote or express an opinion, but he decides who speaks when. Establish rules of address ("the chair recognizes ...") and decorum.

Research and summarize the salient points of the Virginia Plan, New Jersey Plan, and Connecticut (Great) Compromise for your students. Prior to each activity, provide copies of the appropriate plan for each delegate.

Classroom Management

Exactly how you manage each activity depends in part on the number of computers your students may use. The two sections below offer some suggestions. Before each activity, refer to the activity-by-activity lesson plans. These are in chart form, and will tell you how to prepare for, and how much time to allot to, each activity.

Managing One Computer

If you have only one computer, student access to *Constcon* is limited, but this does simplify the software management. You'll only need to use one copy of *Constcon* for each activity. After the session, make a backup copy of the *Constcon* disk and label it. This way, if a disk is accidentally erased, your only loss will be the data entered during that session.

You may want to have students use the computer between class periods to prepare for each activity. If that's not possible, consider dividing some of the activities in two. Reserve the first session for computer access, and the second for the simulation itself.

Managing Several Computers

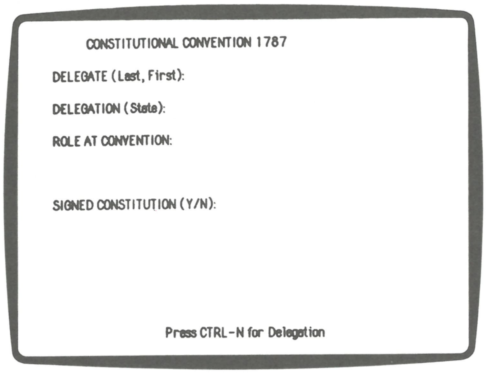
Set aside one computer as the "update" station. Whenever students need to add or change information, they should do it at this update station. At the end of each session, the student playing Major William Jackson should make a backup copy of this updated disk.

If you find it more convenient to use two or more computers as "update" stations, have a check sheet at the station and make sure students sign their delegate's name when they make changes. When the session ends, have Major William Jackson merge the various updated copies of *Constcon*. To simplify this task, ask students to place an asterisk after their own name (not the delegate's name) when they update. Then follow this procedure:

1. Use the Copy Design Only option of the COPY function to copy the file design onto a fresh disk.
2. Use the Copy Selected Forms option of the COPY function to copy just the updated forms from one file onto the new file. To select the forms for copying, type **..*..** after PERSON PLAYING THIS ROLE on Page 3 of the Retrieve Spec.
3. Repeat Step 2 for each copy of the *Constcon* file that contains updated forms.
4. Use the Copy Selected Forms option to copy the forms that have not been updated.
5. Erase the asterisks from the new file.

Grade Level Suggestions

Students in grades six through eight may need more time and assistance in using the simulation activities. High school students and advanced junior high school students may want to work at a faster pace.



CONSTITUTIONAL CONVENTION 1787

DELEGATE (Last, First):

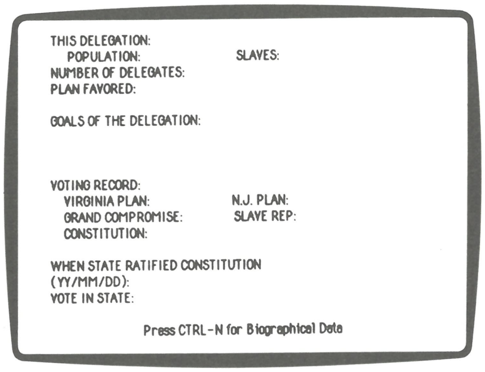
DELEGATION (State):

ROLE AT CONVENTION:

SIGNED CONSTITUTION (Y/N):

Press CTRL-N for Delegation

Page 1



THIS DELEGATION:
POPULATION: SLAVES:
NUMBER OF DELEGATES:
PLAN FAVORED:

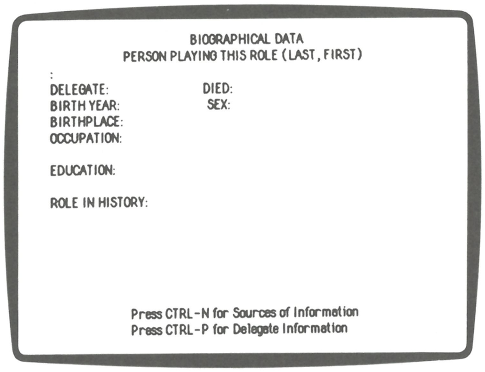
GOALS OF THE DELEGATION:

VOTING RECORD:
VIRGINIA PLAN: N.J. PLAN:
GRAND COMPROMISE: SLAVE REP:
CONSTITUTION:

WHEN STATE RATIFIED CONSTITUTION
(YY/MM/DD):
VOTE IN STATE:

Press CTRL-N for Biographical Data

Page 2



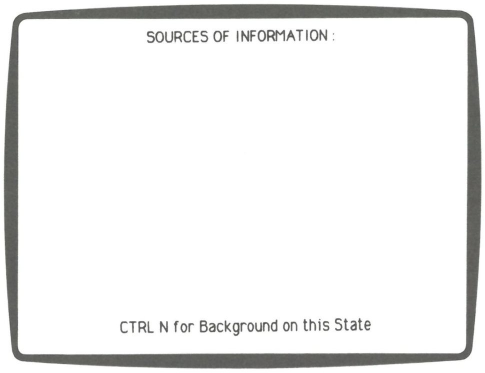
BIOGRAPHICAL DATA
PERSON PLAYING THIS ROLE (LAST, FIRST)
:
DELEGATE: DIED:
BIRTH YEAR: SEX:
BIRTHPLACE:
OCCUPATION:

EDUCATION:

ROLE IN HISTORY:

Press CTRL-N for Sources of Information
Press CTRL-P for Delegate Information

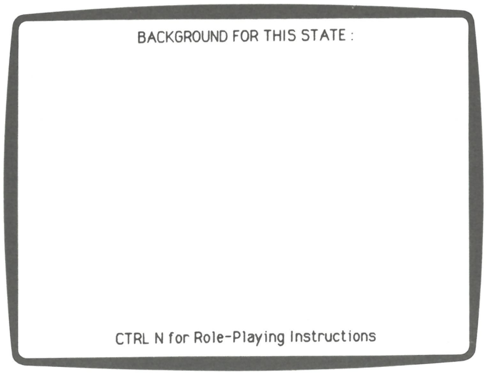
Page 3



SOURCES OF INFORMATION :

CTRL N for Background on this State

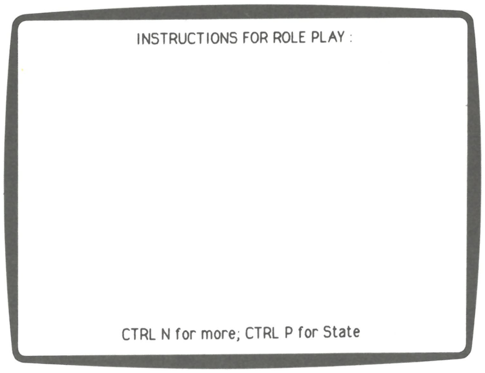
Page 4



BACKGROUND FOR THIS STATE :

CTRL N for Role-Playing Instructions

Page 5



INSTRUCTIONS FOR ROLE PLAY :

CTRL N for more; CTRL P for State

Page 6

Figure A

Constitutional Convention
Activity-by-Activity Lesson Plan Chart

Activity	Objectives	Preparation	Management	Time (per student)
1.	• Explain why the Constitutional Convention convened. • Identify the delegates and the states they represented. • Explore a file. • Type Retrieve Specs.	• Copy the *Constcon* file from the master disk onto the working disks. • Discuss briefly the Constitution and the Articles of Confederation.	• Schedule time on computer for student delegations.	35 minutes
2.	• Identify roles played by the delegates to the Constitutional Convention. • Update a form. • Print a form.	• Copy the *Constcon* file from the master disk onto the working disks. • Set up the printer. • Select a student to play Major William Jackson, the secretary to the convention (preferably a student proficient at computers).	• Schedule time on computer for student pairs. • Explain role selection. • Assign one student the role of George Washington. • Demonstrate the *Constcon* file. • Determine if all of the crucial roles are filled.	35 minutes
3.	• Discover the purpose of the convention. • Recognize the delegates and their goals. • Determine information needs. • Plan and interpret printout.	• Copy the *Constcon* file from the master disk onto the working disks. • Review, with Washington, procedures for the first day of simulation. • Assist Jackson with printout.	• Schedule time on computer for student pairs. • Have each state make a sign indicating their delegation. • Assist Washington in calling the convention to order. • Assist Dickinson and Wythe with their statements.	35 minutes
4.	• Identify goals of delegation. • Decide on data needed to answer questions. • Update the file.	• Copy the *Constcon* file from the master disk onto the working disks. • Set up the printer. • Prepare a summary of the Virginia and New Jersey Plans for the delegations.	• Schedule time on computer for delegations. • Help students formulate their goals. • Give copies of the summaries of the Virginia and New Jersey Plans to the delegations.	45 minutes

(Continued on next page.)

Constitutional Convention
Activity-by-Activity Lesson Plan Chart

Activity	Objectives	Preparation	Management	Time (per student)
5.	• Formulate a reaction to the Virginia Plan and examine delegate positions. • Break problem into subproblems. • Plan and interpret printout. • Update the file.	• Copy the *Constcon* file from the master disk onto the working disks. • Set up the printer. • Review simulation instructions with Washington and Randolph.	• Schedule time on computer for delegations. • Assist delegate chairpersons with entering their votes. • Assist Jackson with tallying votes. • If using more than one computer, assign stations.	45 minutes
6.	• Formulate a reaction to the New Jersey Plan and understand delegate positions. • Break problem into subproblems. • Plan and interpret printout. • Update the file.	• Copy the *Constcon* file from the master disk onto the working disks. • Set up the printer. • Make copies of Connecticut Compromise for delegations. • Review simulation instructions with Washington and Paterson.	• Schedule time on computer for delegations. • Assist delegate chairpersons with entering their vote. • Assist Jackson with tallying votes. • Give copies of the Connecticut Compromise summary to the delegations.	35–45 minutes
7.	• Formulate a response to the Connecticut Compromise Plan, and understand delegate positions. • Break a problem into subproblems. • Plan and interpret a printout. • Update the file.	• Copy the *Constcon* file from the master disk onto the working disks. • Set up the printer. • Review simulation instructions with Washington and Sherman.	• Schedule time on computer for each delegation. • Assist delegate chairpersons with entering their votes. • Assist Jackson with tallying votes.	45 minutes

(Continued on next page.)

Constitutional Convention
Activity-by-Activity Lesson Plan Chart

Activity	Objectives	Preparation	Management	Time (per student)
8.	• Formulate a response to the proposal on slave representation, and understand delegate positions. • Break a problem into subproblems. • Plan and interpret printout. • Update the file.	• Copy the *Constcon* file from the master disk onto the working disks. • Set up the printer. • Review simulation instructions with Washington and Gorham.	• Schedule time on computer for delegations. • Assist delegate chairpersons with entering their votes. • Assist Jackson with tallying votes.	45 minutes
9.	• Decide whether to sign the Constitution. • Consider historical issues and take a stand. • Update the file.	• Copy the *Constcon* file from the master disk onto the working disks. • Assist Wilson and Butler with their speeches.	• Schedule time on computer for each delegate. • Assist Jackson in getting a printout of the results.	20–30 minutes
10.	• Analyze a historical problem. • Sequence and organize data. • Determine information needs. • Plan and interpret a printout.	• Copy the *Constcon* file from the master disk onto the working disks. • Arrange for students to use library, or have reference sources available in the classroom.	• Schedule time on computer for student pairs. • Introduce the project and research questions to the class. • Compare the student work to historical data.	Time will vary according to the research involved.
11.	• Analyze and interpret simulation results. • Propose additional hypotheses.	• Copy the *Constcon* file from the master disk onto the working disks. • Set up the printer. • Arrange for students to go to the library.	• Schedule time on computer for student pairs. • Review debriefing questions. • Assist students in choosing projects.	Time will vary according to the amount of research.

INTRODUCTION

This series of activities shows you how to use the data file named *Constcon* to help you play the role of a delegate in a simulation of the Constitutional Convention of 1787.

Your simulation of the Constitutional Convention will take place over several class days. (Of course, the real Convention lasted much longer!) Each of the activities in this series will show you how to use the *Constcon* data file in that day's simulation.

Here are some examples of the ways in which you can use the *Constcon* file in your simulation.

- Find out who will be attending the Convention.
- Find out about the roles played by different delegates at the Convention.
- Record decisions you and your delegation make concerning your delegation's goals.
- Get information about other delegations to use in your lobbying efforts.
- Record your delegation's votes on plans and issues.
- Analyze basic principles in the Constitution debated at the Convention.
- Analyze events and people involved in the Convention.

Activities in This Unit

Please do the activities in the order listed.

Activity 1: Preparing for the Convention
Activity 2: Choosing Your Role
Activity 3: Arriving at the Convention
Activity 4: Meeting Your Delegation
Activity 5: Debating the Virginia Plan
Activity 6: Debating the New Jersey Plan
Activity 7: Voting on the Connecticut Compromise
Activity 8: Debating the Slavery Issue
Activity 9: Signing the Constitution
Activity 10: Ratifying the Constitution
Activity 11: Debriefing

ACTIVITY 1: PREPARING FOR THE CONVENTION

Imagine that you have the opportunity to participate in an event as important as the Constitutional Convention for a young nation! Of course, you're anxious to find out the purpose of this meeting, and who will be attending.

What You'll Do

First, you'll start up the *File* program. If you don't already know how to do this, now is the time to learn! Next, you'll learn how to get information about some of the delegates. The fancy phrase for what you'll do is "information retrieval."

What You'll Need

- A *File* data disk called *Constcon* (Check with your teacher to make sure a backup copy of the *Constcon* file has been made before you use it.)
- A *File* program disk
- An Apple *//e* or //c computer

Starting Up the File Program

The following is the standard procedure for starting up the *File* program. Use this same procedure any time you start up *File*.

1. Remove the *File* program from its protective jacket and insert it into Drive 1. (On an Apple //c, Drive 1 is the built-in drive.) Close the door on the disk drive.
2. If the computer is off, turn it on. Turn on the monitor. If the computer is already on, press the **CTRL**, **OPEN APPLE**, and **RESET** keys all at the same time. The PFS: File Function Menu will appear on the screen.
3. Remove the *File* program disk from Drive 1 and put it in its protective jacket. You won't need it any more in this lesson.
4. Insert the *Constcon* data disk into Drive 1 and close the door on the disk drive.

CAUTION: Never remove the data disk from the disk drive or turn the computer off unless the PFS: File Function Menu is on the screen.

Selecting the SEARCH/UPDATE Function

The PFS: File Function Menu is on your screen. It lists six functions. The only function we're going to use right now is the SEARCH/UPDATE function. This is the part of the *File* program you use to find information that is stored in a file on a data disk.

1. Select SEARCH/UPDATE by typing *4*.
2. If FILE NAME is blank, leave it blank. If it says FILE NAME: *Constcon* that's okay, too. You don't need to type a file name when you choose SEARCH/UPDATE. The program will look at the file in Drive 1, and find out what the file name is.
3. Press **CTRL-C**. (Hold down **CTRL** and press **C**.) A blank Retrieve Spec will appear. You'll use the Retrieve Spec form to tell the *File* program which delegate you want to look at (retrieve).

You have just completed the procedure for selecting the SEARCH/UPDATE function. From here on, whenever you see "select SEARCH/UPDATE from the PFS: File Function Menu," follow the procedure above.

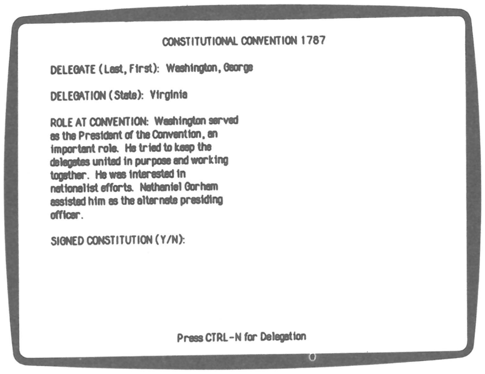
Finding Out if George Will Be at the Convention

A blank Retrieve Spec is on the screen. (Check to see that the phrase "Retrieve Spec" is on the bottom of your screen. If it isn't, press **ESC** and select SEARCH/UPDATE over again.)

1. The cursor is sitting beside DELEGATE. Type *Washington, George*.
2. Press **CTRL-C**. The form for George Washington will appear. What state will he represent? What role will he play at the convention?

Finding Out More About George

Press **CTRL-N** twice to see Page 3 of George's form. It should say "BIOGRAPHICAL DATA" on the top of the page. How old is George now, in 1787? What state does he reside in? Read his ROLE IN HISTORY and EDUCATION.



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                CONSTITUTIONAL CONVENTION 1787

DELEGATE (Last, First):  Washington, George

DELEGATION (State):  Virginia

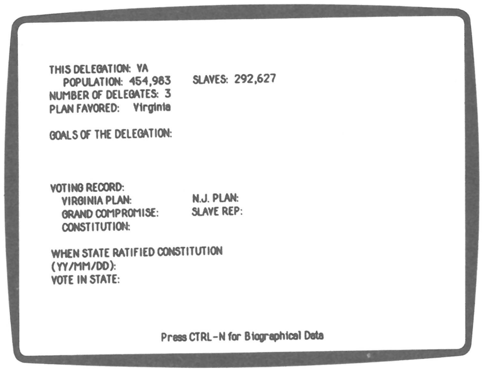
ROLE AT CONVENTION:  Washington served
as the President of the Convention, an
important role.  He tried to keep the
delegates united in purpose and working
together.  He was interested in
nationalist efforts.  Nathaniel Gorham
assisted him as the alternate presiding
officer.

SIGNED CONSTITUTION (Y/N):




                 Press CTRL-N for Delegation
```

Page 1



```
THIS DELEGATION:  VA
   POPULATION:  454,983     SLAVES:  292,627
NUMBER OF DELEGATES:  3
PLAN FAVORED:    Virginia

GOALS OF THE DELEGATION:

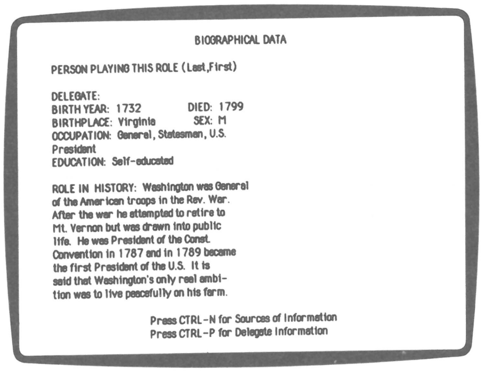


VOTING RECORD:
   VIRGINIA PLAN:            N.J. PLAN:
   GRAND COMPROMISE:         SLAVE REP:
   CONSTITUTION:

WHEN STATE RATIFIED CONSTITUTION
(YY/MM/DD):
VOTE IN STATE:


               Press CTRL-N for Biographical Data
```

Page 2



```
                    BIOGRAPHICAL DATA

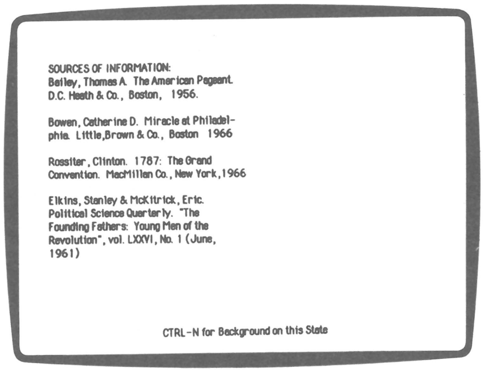
PERSON PLAYING THIS ROLE (Last,First)

DELEGATE:
BIRTH YEAR:  1732           DIED:  1799
BIRTHPLACE:  Virginia         SEX:  M
OCCUPATION:  General, Statesman, U.S.
President
EDUCATION:  Self-educated

ROLE IN  HISTORY:  Washington was General
of the American troops in the Rev. War.
After the war he attempted to retire to
Mt. Vernon but was drawn into public
life.  He was President of the Const.
Convention in 1787 and in 1789 became
the first President of the U.S.  It is
said that Washington's only real ambi-
tion was to live peacefully on his farm.

                Press CTRL-N for Sources of Information
                Press CTRL-P for Delegate Information
```

Page 3



```
SOURCES OF INFORMATION:
Bailey, Thomas A.  The American Pageant.
D.C. Heath & Co.,  Boston,   1956.

Bowen, Catherine D.  Miracle at Philadel-
phia.  Little,Brown & Co.,  Boston   1966

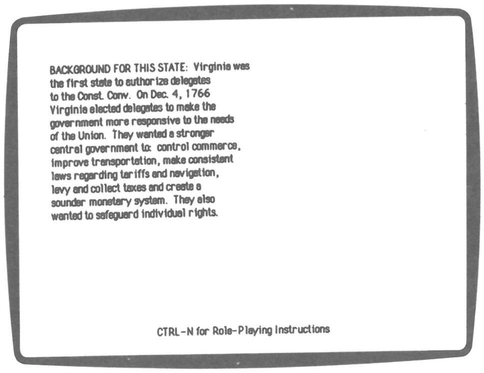
Rossiter, Clinton.  1787:  The Grand
Convention.  MacMillan Co., New York,1966

Elkins, Stanley & McKitrick, Eric.
Political Science Quarterly.  "The
Founding Fathers:  Young Men of the
Revolution", vol. LXXVI, No. 1 (June,
1961)



                 CTRL-N for Background on this State
```

Page 4

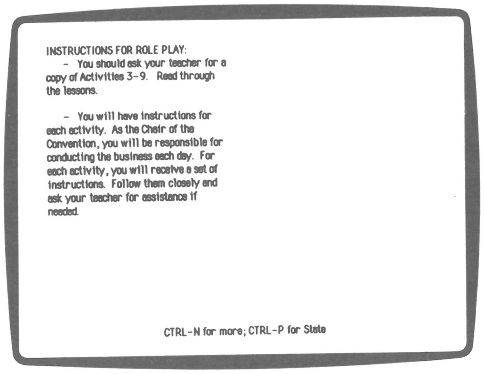


```
BACKGROUND FOR THIS STATE:  Virginia was
the first state to authorize delegates
to the Const. Conv.  On Dec. 4, 1766
Virginia elected delegates to make the
government more responsive to the needs
of the Union.  They wanted a stronger
central government to:  control commerce,
improve transportation, make consistent
laws regarding tariffs and navigation,
levy and collect taxes and create a
sounder monetary system.  They also
wanted to safeguard individual rights.




               CTRL-N for Role-Playing Instructions
```

Page 5



```
INSTRUCTIONS FOR ROLE PLAY:
     -  You should ask your teacher for a
copy of Activities 3-9.   Read through
the lessons.

     -  You will have instructions for
each activity.  As the Chair of the
Convention, you will be responsible for
conducting the business each day.  For
each activity, you will receive a set of
instructions.  Follow them closely and
ask your teacher for assistance if
needed.




                 CTRL-N for more; CTRL-P for State
```

Page 6

Figure 1

When you are finished looking at George Washington, press **CTRL-C**. If you want to get the PFS: File Function Menu again, press **ESC**. The menu will appear.

REMINDER: If you accidentally change any data on the form, press ***ESC*** *to avoid changing the data on disk.*

Seeing if Ben Franklin Will Attend

The PFS: File Function Menu is on your screen.

1. Type *4*, and then press **CTRL-C**. The blank Retrieve Spec form will appear.
2. Type *Franklin* **..** (Franklin dot dot). The "dot dot" means "anything." This way, you can retrieve information about a delegate without knowing his first name.
3. Press **CTRL-C**. The form for Benjamin Franklin will appear.
4. Find out how old Franklin is now, in 1787.

When you're finished looking at the form, press **CTRL-C** or **ESC**.

Seeing Who's Attending From Connecticut

The PFS: File Function Menu is on your screen.

1. Type *4*, and then press **CTRL-C**. The blank Retrieve Spec will appear.
2. Press the **TAB** key to move the cursor to DELEGATION.
3. Type *Conn*.. (Conn dot dot). It doesn't matter whether you use uppercase or lowercase letters. The *File* program will accept either.
4. Press **CTRL-C**. A delegate's form appears. Who is it?
5. Does it look like he'll have an important role in the convention? Look up his biographical data. How old is he now?
6. Press **CTRL-C**. Is there another delegate from Connecticut?
7. Keep looking at the delegates from Connecticut until you find Roger Sherman. Take note of his role, because he played a very important part in the convention.
8. Continue looking at delegates and pressing **CTRL-C** until the message appears telling how many forms were found. How many delegates will be attending from Connecticut?
9. Press **CTRL-C**. The PFS: File Function Menu will appear.

Finding the Delegates Who Played the Most Important Roles

Your class needs to be sure that all the delegates who had important roles in the convention will be represented in your simulation. Find out who these "important role" delegates were, and take notes on a piece of paper as you do so.

1. Type *4*, and then press **CTRL-C**. The blank Retrieve Spec will appear.
2. Press the **TAB** key to move the cursor to ROLE AT CONVENTION.
3. Type **..***important role* **..** (dot dot important role dot dot).
4. Press **CTRL-C**. A delegate's form will appear. Who is it?
5. Does it look as if he'll have an important role in the convention?
6. Press **CTRL-C**. Which delegate appears?
7. Continue looking at delegates and pressing **CTRL-C** until the message appears telling how many forms were found.
8. Press **CTRL-C**. The PFS: File Function Menu will appear.

How Many Lawyers Will Be Attending?

There will be 55 delegates coming to the meeting. Here's how to find out how many of them are lawyers.

1. Get the blank Retrieve Spec on your screen.
2. Press **CTRL-N** twice to see Page 3 of the blank form.
3. Press the **TAB** key to move the cursor to OCCUPATION.
4. Type **..***lawyer* **..** (dot dot lawyer dot dot).
5. Press **CTRL-C**. A delegate's form will appear. Who is it?
6. Press **CTRL-N** twice to see his biographical data.
7. Continue looking at the delegates who are lawyers, and pressing **CTRL-C** until the message appears telling how many forms were found.
8. Press **CTRL-C**. The PFS: File Function Menu will appear.

On Your Own

Try to get this information from the *Constcon* file without having a written procedure to follow.

How many merchants will be attending the meeting?

Who will be coming from New York?

What will William Jackson's role be?

How many of the delegates went to Harvard?

Finishing Up

When you're finished with this activity, be sure the PFS: File Function Menu is on the screen. If it isn't, press **ESC**. Then remove the *Constcon* data disk from the disk drive and put it back carefully in its protective jacket. Put the disk where your teacher tells you to keep it. Then turn off the computer.

ACTIVITY 2: CHOOSING YOUR ROLE

There were 55 delegates at the Constitutional Convention. Your class may not have enough people to have that many delegates. The class will need at least one delegate from each of the 12 states represented at the Convention, including all of the delegates who played important roles.

What You'll Do

With your teacher's help, you will decide which delegate's role to play. You will enter your name on that delegate's form in the *Constcon* file, and print out a copy of the form to use in preparing for your role.

What You'll Need

- An Apple *IIe* or IIc computer
- A printer
- A *File* program disk
- A *Constcon* data disk

Deciding Which Delegate's Role to Play

Your teacher will tell the class how to go about choosing a role for the simulation. Which delegate will you be?

Entering Your Name Into the File

Start up the *File* program. If you don't remember how to do this, see Activity 1 or the Quick Guide.

Check to see that the printer is turned on and the paper is adjusted in the printer.

The PFS: File Function Menu is on your screen and your *Constcon* data disk is in Drive 1.

Searching for Your Delegate's Form

1. Type *4* to select SEARCH/UPDATE.
2. Press **CTRL-C**. The blank Retrieve Spec form for the *Constcon* file should appear on the screen. If it doesn't, you have the wrong data disk. Find the right one and start over.
3. Beside DELEGATE on the Retrieve Spec, type your delegate's name (last name, first name).
4. Press **CTRL-C**. The form for your delegate should be on your screen.

REMINDER: If you accidentally change any data on the form, press **ESC** *to avoid changing the information on the disk.*

Entering Your Name on the Form

1. Press **CTRL-N** twice to see Page 3 of the form.
2. Press **TAB** to move the cursor to PERSON PLAYING THIS ROLE (LAST, FIRST).
3. Type your last name, then a comma, and then your first name. If you make a mistake, use the **DELETE** key to back up the cursor, and then type the information over again.

Printing Your Form

Your delegate's form is still on your screen.

1. Press **CTRL-O** (the letter O, not zero). The Print Options screen appears.
2. Leave the Pre-defined Print Spec blank.
3. Press **TAB** to move the cursor to ADD LINEFEED (Y/N). Type *Y* unless you're sure your printer doesn't need a linefeed.
4. Press **CTRL-C**. The form should begin printing. If it doesn't, check again to make sure the printer is turned on and connected to the computer.
5. When the printout is complete, the form for your delegate is still on the screen.
6. Press **CTRL-C** to store the form with your name on it on the disk.

Finishing Up

When you're finished using the computer for this activity, be sure the PFS: File Function Menu is on the screen. If it isn't, press **ESC**. Then remove the *Constcon* data disk from the disk drive and return it carefully to its protective jacket. Put the disk where your teacher tells you to keep it. Then turn off the computer.

After all of the students have entered their names into the *Constcon* file, the student who plays the role of Major William Jackson will make a printout of the delegates' names and the names of the students playing those roles. He or she will use that list for roll call when the convention is called to order.

Study carefully the information on the printout about your delegate's background—his age, occupation, his role in history, and his role in the convention. Try to imagine you are that person as you prepare for the convention, which is about to begin.

Keep your printout of your delegate's information, and bring it with you to the convention.

ACTIVITY 3: ARRIVING AT THE CONVENTION

After the long journey to Philadelphia, all of the delegates have finally arrived. Today the meeting is called to order by George Washington. When Major William Jackson calls the role, you'll answer when you hear your name. You might say a few words to introduce yourself to the group.

John Dickinson will explain the purpose of the gathering. George Wythe will present the rules to be followed at the Convention.

What You'll Do

Before the formal meeting, you'll want to get a printout of information about people at the convention, so you can learn to address them by name and prepare to discuss the issues with them.

What You'll Need

- An Apple *IIe* or IIc computer
- A printer
- A *File* program disk
- A *Constcon* data disk

Defining Your Information Needs

The first step in planning a *File* printout is to define carefully the information you want. At the meeting, you want to be able to call people by their delegate names. You want to be familiar at least with the names of your own delegation.

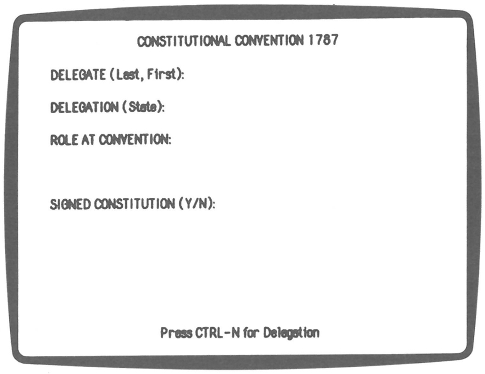
Deciding Which Forms to Select for Printing

In order to get a good understanding of the printout you're going to make, the first thing you should decide is which delegates should be selected for the printout. You might want just a list of all the delegates from your state. Or you might want a complete list of all the delegates at the convention.

Make a note here about the Retrieve Spec you will use to select the delegates for printing. For example, if you wanted all the delegates from Virginia your Retrieve Spec would be DELEGATION (STATE): *Virginia*. If you want a printout of all of the delegates, you would leave the Retrieve Spec blank.

Deciding Which Data Items to Include in the Printout

Look at the *Constcon* form in Figure 2 on page 21, and decide which of the data items would be useful to you in becoming acquainted with your fellow delegates. The name of the DELEGATE is of course needed. Perhaps you also want the ROLE AT CONVENTION, so you'll know what to expect from this person at the meeting. You might want to list their EDUCATION, so you'll know whether any of your old college buddies are in the group. You probably also want the STUDENT'S NAME. Don't get more information in your printout than you can really use in your first couple of meetings at the convention—a big fat printout is hard to use.



```
CONSTITUTIONAL CONVENTION 1787

DELEGATE (Last, First):

DELEGATION (State):

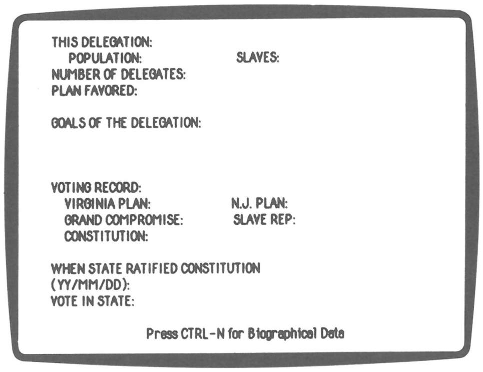
ROLE AT CONVENTION:


SIGNED CONSTITUTION (Y/N):




Press CTRL-N for Delegation
```

Page 1



```
THIS DELEGATION:
   POPULATION:                  SLAVES:
NUMBER OF DELEGATES:
PLAN FAVORED:

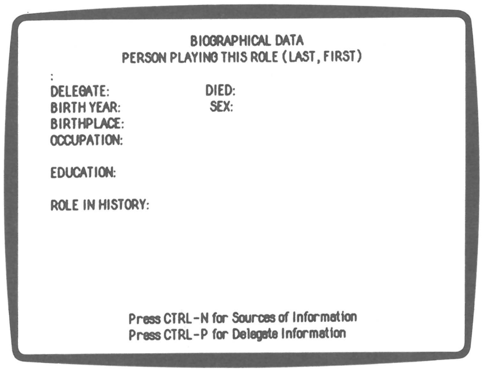
GOALS OF THE DELEGATION:


VOTING RECORD:
   VIRGINIA PLAN:               N.J. PLAN:
   GRAND COMPROMISE:            SLAVE REP:
   CONSTITUTION:

WHEN STATE RATIFIED CONSTITUTION
(YY/MM/DD):
VOTE IN STATE:

Press CTRL-N for Biographical Data
```

Page 2



```
BIOGRAPHICAL DATA
PERSON PLAYING THIS ROLE (LAST, FIRST)
:
DELEGATE:                    DIED:
BIRTH YEAR:                  SEX:
BIRTHPLACE:
OCCUPATION:

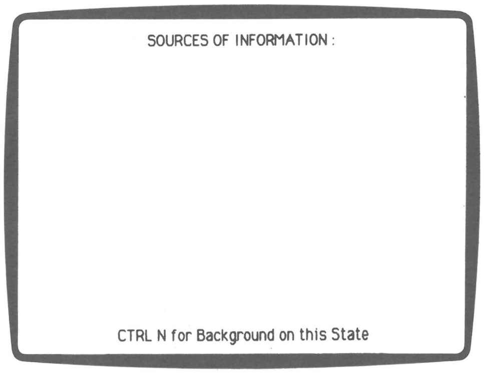
EDUCATION:

ROLE IN HISTORY:




Press CTRL-N for Sources of Information
Press CTRL-P for Delegate Information
```

Page 3



```
SOURCES OF INFORMATION :



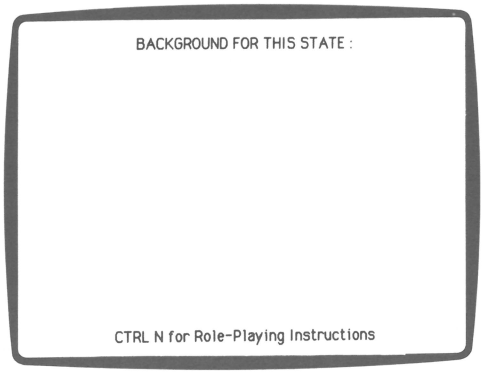







CTRL N for Background on this State
```

Page 4



```
BACKGROUND FOR THIS STATE :



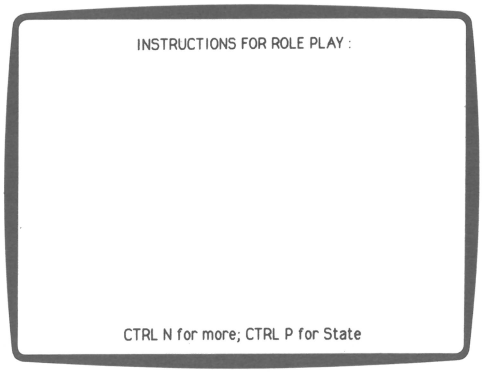







CTRL N for Role-Playing Instructions
```

Page 5



```
INSTRUCTIONS FOR ROLE PLAY :










CTRL N for more; CTRL P for State
```

Page 6

Figure 2

Write here the data items you want included in your printout: ______________________________

Listing the Data in Order

In what order should the data be listed in the printout? There are a couple of possibilities. You could list the delegate's names in alphabetical order. Or, if you're interested in where people went to college, you could sort by EDUCATION.

Choose which data item you will use for sorting. (There often isn't any single "right way" to retrieve information. Sometimes you have to try a couple of different ways before you find the most useful approach.)

Write the data item you'll use for sorting: ____________________

Naming the Pre-defined Print Spec

The Print Spec is a form you use to tell the *File* program which data items to print and which data item to use for sorting. You'll need to give your Print Spec a name. What name will you give to the Print Spec? It should be related to the data you're going to print. Our example uses DELEGATE. Remember that the name must be eight characters or less.

Write the name you'll use for your Pre-defined Print Spec: ____________________

Setting Up a Pre-defined Print Spec

Now that you have planned your printout, you can set up the Pre-defined Print Spec. The Print Spec will tell the *File* program which data items you want printed and in what order.

First, start up the *File* program in the usual manner. If you don't remember how to do this, see Activity 1 or the Quick Guide.

The PFS: File Function Menu is on your screen and the *Constcon* data disk is in Drive 1.

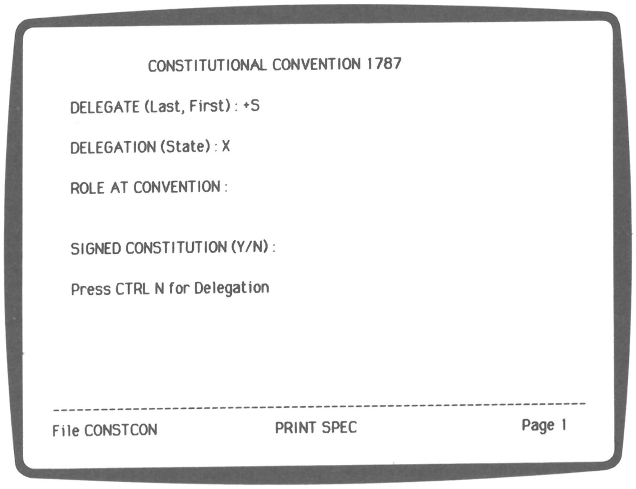
1. Select the PRINT function by typing *5*. Press **TAB**.
2. Type the FILE NAME: *Constcon*. Press **CTRL-C**. The Print Menu will appear.
3. Select Define Print Spec by typing *2*. Press **CTRL-C**. The Current Pre-defined Print Specs screen will appear.
4. Type your Print Spec name. This example uses DELEGATE.
5. Press **CTRL-C**. The blank Print Spec form will appear on the screen.
6. Type a plus sign (*+*) beside DELEGATE. The *+* tells the *File* program to print this data item, and to print the next data item on the same line.
7. If you want to sort the delegates alphabetically by last name, type an *S* beside the *+*. ("*S*" stands for sort.)
8. Press **TAB** to move the cursor to the next data item you want printed.

9. Type *X*. This tells the program to print this data item. If the data item on the screen takes up more than one line and you want the data to be printed as text across the page, type *T* (for "text") instead of *X*.

10. Continue moving the cursor to the next data item you want printed, and then typing *X* to tell the program to print that data item.

11. When you have completed the Print Spec, press **CTRL-C** to store it on the disk.

Figure 3 shows the Print Spec we used for the DELEGATE printout.



```
          CONSTITUTIONAL CONVENTION 1787

   DELEGATE (Last, First) : +S

   DELEGATION (State) : X

   ROLE AT CONVENTION :

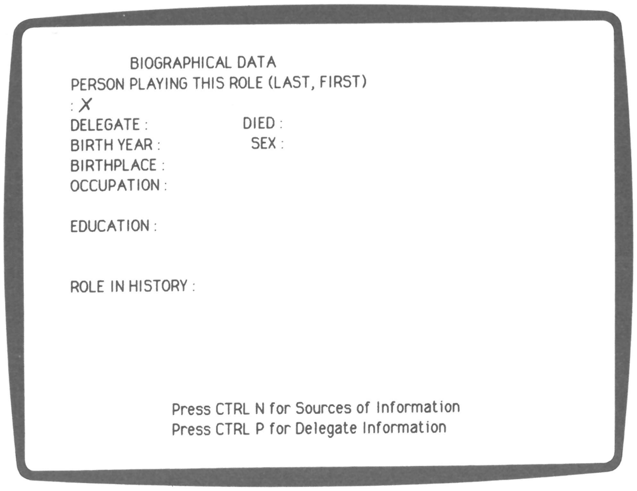

   SIGNED CONSTITUTION (Y/N) :

   Press CTRL N for Delegation




------------------------------------------------------------------
File CONSTCON              PRINT SPEC                    Page 1
```

Page 1



```
        BIOGRAPHICAL DATA
   PERSON PLAYING THIS ROLE (LAST, FIRST)
   : X
   DELEGATE :                 DIED :
   BIRTH YEAR :                SEX :
   BIRTHPLACE :
   OCCUPATION :

   EDUCATION :


   ROLE IN HISTORY :





                Press CTRL N for Sources of Information
                Press CTRL P for Delegate Information
```

Page 3

Figure 3

Printing the Data

Now you can use your Pre-defined Print Spec to print out your data. Check to make sure that your printer is connected to your computer, the printer is turned on, and the paper is aligned in the printer. The PFS: File Function Menu should be on your screen.

Setting Up the Retrieve Spec

1. Type *5*, and then press **CTRL-C**. The PRINT Menu will appear.

2. Choose the Print Forms option by typing *1*. Press **CTRL-C**. The blank Retrieve Spec will appear. The program asks, "Which forms do you want to select for printing?" Refer to your notes above. What Retrieve Spec were you going to use?

3. For our example, we are printing all the Virginia delegates. So we type *Virginia* beside DELEGATION (STATE).

4. Press **CTRL-C**. The Print Options Menu will appear.

Filling in the Print Options

Fill in the Print Options as shown below. Use **TAB** to get from one option to another.

PRE-DEFINED PRINT SPEC: *DELEGATE* (or whatever you've chosen)
PRINT ITEM NAMES: *N*
ADD LINEFEED CHARACTERS (Y/N): *Y*
LINES PER PAGE: *3*
NUMBER OF COPIES: *1*

The Lines Per Page number depends on how many lines you want to print from each form. You may have to experiment with this awhile to get it the way you want it.

NOTE: If you have an older version of the File *program, your Print Options Menu will look a little different from this. Instead of ADD LINEFEED CHARACTERS: Y, use OUTPUT DEVICE: L.)*

Now press **CTRL-C**. The *File* program begins searching the file for the forms you've requested, and begins sorting the forms. Then the printing begins. If the printer does not print your data, make sure that it is turned on and connected to your computer.

Figure 4 shows our sample printout for Virginia delegates. For each delegate it shows the delegate's name, state, and the student who is playing that role. Notice that the delegates are printed in alphabetical order by last name.

```
Blair, John  Virginia
White, Charlie

Madison, James  Virginia
Neumann, Bob

Mason, George  Virginia
vander Ven, Catherine

McClurg, James  Virginia
Furlong, Mary

Randolph, Edmund  Virginia
Treanor, Collin

Washington, George  Virginia
Hunter, Cindy

Wythe, George  Virginia
Hunter, Shawn
```

Figure 4

Finishing Up

To finish the session on the computer, get the PFS: File Function Menu on your screen. Remove the *Constcon* data disk from the disk drive and put it back in its protective jacket. Turn off the computer unless someone is waiting to use it. Put the disks wherever your teacher tells you to keep them.

ACTIVITY 4: MEETING YOUR DELEGATION

Today your delegation has a meeting to decide on issues and goals. In your delegation meeting, you'll choose a chairperson for your delegation, discuss your opinions on the issues, talk over which plan for the Constitution you'll support, and decide on your delegation's goals.

What You'll Do

After your discussion, you'll write down on your delegate form the goals of your delegation. You may word the goals a little differently from other members of your delegation, depending on your particular role in the convention.

Next, you'll enter your goals into the *Constcon* file and print out a fresh copy of your delegate's form.

The delegate chosen to be the chairperson for the delegation will add an asterisk to his or her name in the file so he or she can be identified as the official representative for voting purposes.

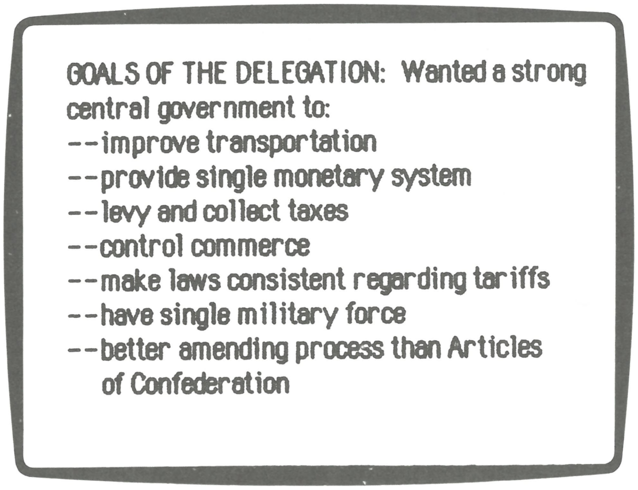
What You'll Need

- Your printout of your delegate's information, with a blank space to write the goals of your delegation.
- An Apple *II*e or IIc computer
- A *File* program disk
- A *Constcon* data disk
- A printer

Summarizing Your Delegation's Goals

On Page 5 of the form, you will find background information and the reasons why your state came to the Constitutional Convention. On your *Constcon* printout form you have a small space (nine lines of 40 characters each) on which to summarize your interpretation of your state delegation's goals. Figure 5 on page 27 shows an example of George Washington's summary of the Virginia delegation's goals.

Select a chairperson for your delegation. Make a list of the most important goals of your delegation, and write it on your form.



```
GOALS OF THE DELEGATION:  Wanted a strong
central government to:
--improve transportation
--provide single monetary system
--levy and collect taxes
--control commerce
--make laws consistent regarding tariffs
--have single military force
--better amending process than Articles
  of Confederation
```

Figure 5

Adding Your Goals to the Constcon File

Now you're ready to update the file with your goals.

1. Start up the *File* program.
2. Use the SEARCH/UPDATE function to get your delegate's form on the screen.
3. Press **CTRL-N** to see Page 2 of the form.
4. Press **TAB** to move the cursor to GOALS OF THE DELEGATION.
5. Type your summary of your delegation's goals. Try to type a neat list, such as the one shown in Figure 5. If you make a typing mistake, back up the cursor with the **DELETE** key or the **LEFT ARROW** key, and type over the mistake.
6. If you are the chairperson for your delegation, go back to Page 1 of the form and type an asterisk (*) after your delegate's name. It should look like this: DELEGATE (Last, First): *Sherman, Roger**
7. When you've finished typing, press **CTRL-O** to get a printout of your updated form.
8. After your printout is complete, press **CTRL-C** to store your updated form on the disk.

On Your Own

You may be curious about the goals of some of the other delegations. If some of the other delegates have already put their goals into the file, you might take a look at some of them. You can look up their goals by delegate name or state name.

Finishing Up

When you've finished working on the computer, finish up in your usual manner, putting the disks where they belong. Keep your printout to use in later meetings at the convention.

ACTIVITY 5: DEBATING THE VIRGINIA PLAN

Today you'll be debating the Virginia Plan, and lobbying to persuade other delegates to vote the way you want them to vote. The *Constcon* file will help you get information that will help you in your lobbying efforts.

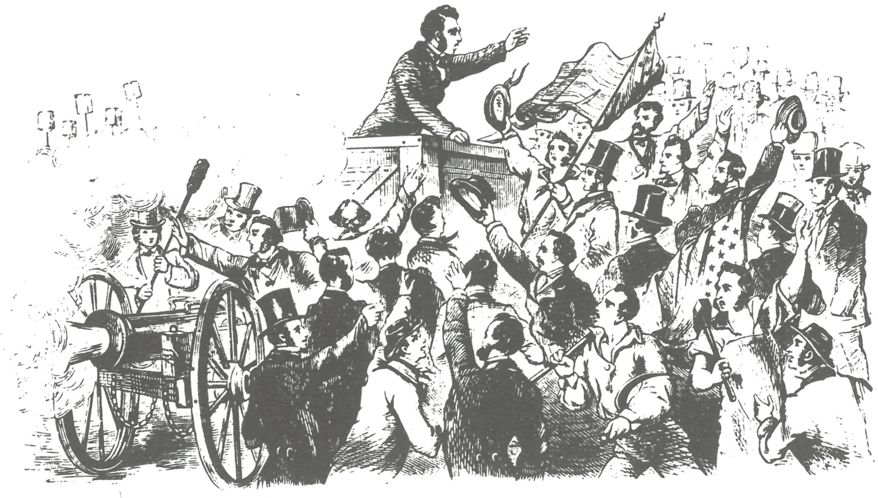
What You'll Do

After Governor Randolph of Virginia presents the Virginia Plan in a speech, you and your delegation will meet to decide how you will try to persuade other delegates to vote the way you want them to vote on the Virginia Plan. You'll use the *Constcon* file to get information about who favors the Virginia Plan, and who may be most influential in supporting or defeating it. Then you'll use that information to seek out the most important people you need to try to persuade.

You'll have only a short amount of time in which to do your lobbying, before the other delegates cast their votes. So the quicker you can get the information from the *Constcon* file, the more time you'll have to do your lobbying. The more useful the information you can get out of the file, the better chance you'll have of persuading the right people.

What You'll Need

- An Apple *II*e or IIc computer
- A printer
- A *Constcon* data disk
- A *File* program disk



Getting Information About Your Opponents

Meet with your delegation and decide what information you need about your opposition. Of course, if your delegation favors the Virginia Plan, your opponents are those who favor the New Jersey Plan, and vice versa. Decide quickly what information you want on your printout that will help your group in its lobbying efforts.

Since you and your fellow delegation members may only have time to talk with a few of the opposition members, you will want to try to talk with the most important ones, or the ones you're most likely to be able to persuade. What's the most efficient way of getting this information from the *Constcon* file?

Here are some possibilities for your delegation to consider.

- You could get a printout listing all of the delegates, sorted by state population. The states with the smallest populations are not likely to support the Virginia Plan, are they? What about the states in the middle of the list—those that are neither the largest or the smallest? Perhaps delegates in those states could be persuaded to go one way or another.

- In ROLE AT CONVENTION, some delegates are described as "open minded," or as interested in "compromise." You might get a list of all the delegates who are listed as "open minded" in their role description.

- If your delegation is in favor of the Virginia Plan, you could get a list of all the delegates who favor the New Jersey Plan. On your printout, include the ROLE AT CONVENTION of each of those delegates, as well as the GOALS OF THE DELEGATION. Then scan the printout to see which of your opponents you might be able to persuade to vote in favor of the Virginia Plan.

Lobbying for Your Position

Use the information you've obtained to pick out delegates to persuade to vote in favor of your position on the Virginia Plan. Use what you know about their interests and roles to try to make persuasive arguments for or against the Virginia Plan.

Voting on the Virginia Plan

At some point your teacher or George Washington will announce that it's time to take a vote on the Virginia Plan.

The chairperson for your delegation will make the official vote for your delegation by entering *YEA** or *NAY** into the *Constcon* file beside VIRGINIA PLAN on his or her delegate form. The asterisk shows that this is the official vote for your delegation. Then, each member of your delegation will enter *YEA* or *NAY* (without the asterisk) on his or her form in the file.

After all delegations have voted, Major William Jackson will get a printout of the results. George Washington will announce the results to the convention.

ACTIVITY 6: DEBATING THE NEW JERSEY PLAN

Today George Washington will call on William Paterson to present the New Jersey Plan. You'll be lobbying to persuade other delegates to vote the way you want them to vote. The *Constcon* file will help you get information that will help you in your lobbying effort.

What You'll Do

After William Paterson presents the New Jersey Plan in a speech, you and your delegation will meet to decide how you will try to persuade other delegates to vote the way you want them to vote on the New Jersey Plan. You'll use the *Constcon* file to get information about who favors the New Jersey Plan, and who may be most influential in supporting or defeating it. Then you'll use that information to seek out the most important people you need to try to persuade.

You'll have only a short amount of time in which to do your lobbying, before the other delegates cast their votes. So the quicker you can get the information from the *Constcon* file, the more time you'll have to do your lobbying. The more useful the information you can get out of the file, the better chance you'll have of persuading the right people.

What You'll Need

- An Apple *II*e or IIc computer
- A printer
- A *Constcon* data disk
- A *File* program disk.

Getting Information About Your Opponents

Meet with your delegation and decide what information you need about your opposition. Of course, if your delegation favors the New Jersey Plan, your opponents are those who favor the Virginia Plan, and vice versa. Decide quickly what information you want on your printout that will help your group in its lobbying efforts.

Since you and your fellow delegation members may only have time to talk with a few of the opposition members, you will want to try to talk with the most important ones, or the ones you're most likely to be able to persuade. What's the most efficient way of getting this information from the *Constcon* file?

Here are some possibilities for your delegation to consider.

- You could get a printout listing all of the delegates, sorted by state population. The states with the largest populations are not likely to support the New Jersey Plan, are they? What about the states in the middle of the list—those that are neither the largest or the smallest? Perhaps delegates in those states could be persuaded to go one way or the other.

- In ROLE AT CONVENTION, some delegates are described as "open minded," or as interested in "compromise." You might get a list of all the delegates who are listed as "open minded" in their role description. Or you might get a list of all of the delegates who have "compromise" in their role description.

- If your delegation is in favor of the New Jersey Plan, you could get a list of all the delegates who favor the Virginia Plan. On your printout, include the ROLE AT CONVENTION of each of those delegates, as well as the GOALS OF THE DELEGATION. Then scan the printout to see which of your opponents you might be able to persuade to vote in favor of the New Jersey Plan.

Lobbying for Your Position

Use the information you've obtained to pick out delegates to persuade to vote in favor of your position on the New Jersey Plan. Use what you know about their interests and roles to try to make persuasive arguments for or against the New Jersey Plan.

Voting on the New Jersey Plan

At some point your teacher or George Washington will announce that it's time to take a vote on the New Jersey Plan.

The chairperson for your delegation will make the official vote for your delegation by entering *YEA** or *NAY** into the *Constcon* file beside NEW JERSEY PLAN on his or her delegate form. Then, each member of your delegation will enter the *YEA* or *NAY* (without the asterisk) on his or her form in the file.

After all of the delegations have voted, Major William Jackson will get a printout of the results. George Washington will announce the results to the convention.

ACTIVITY 7: VOTING ON THE CONNECTICUT COMPROMISE

Today Roger Sherman will introduce the Connecticut Compromise. Delegates will debate the plan. Your delegation will have to decide whether or not to accept the compromise.

Voting on the Compromise

Your delegation will meet to decide whether to accept the compromise. At some point your teacher or George Washington will announce that it's time to vote.

The chairperson for your delegation will make the official vote for your delegation by entering *YEA** or *NAY** into the *Constcon* file beside GREAT COMPROMISE on his or her delegate form. Then each member of your delegation will enter the *YEA* or *NAY* (without the asterisk) on his or her form in the file.

After all of the delegations have voted, Major William Jackson will get a printout of the results. George Washington will announce the results to the convention.

ACTIVITY 8: DEBATING THE SLAVERY ISSUE

Today there will be a debate as to whether slaves should be counted as part of the population to be represented in the House of Representatives. You'll be lobbying to persuade other delegates to vote the way you want them to vote. The *Constcon* file will help you get information that will help in your lobbying efforts.

What You'll Do

You and your delegation will meet to decide how you will try to persuade other delegates to vote the way you want them to on the slavery issue. You'll use the *Constcon* file to get information about which positions the delegates might be taking on the slavery issue. Then you'll use that information to seek out the most important people you need to try to persuade.

You'll have only a short amount of time in which to do your lobbying, before the other delegates cast their votes, so the quicker you can get the information from the *Constcon* file, the more time you'll have to do your lobbying. The more useful the information you can get out of the file, the better chance you'll have of persuading the right people.

What You'll Need

- An Apple *IIe* or IIc computer
- A printer
- A *Constcon* data disk
- A *File* program disk

Getting Information About Your Opponents

Listen to Nathaniel Gorham's proposal. Meet with your delegation and decide whether you will vote YEA or NAY to the proposal that slaves will be counted for representation purposes by counting every five slaves as equal to three white inhabitants. Decide what information you need about your opposition. Decide quickly what information you want on your printout that will help your group in its lobbying efforts.

Since you and your fellow delegation members may only have time to talk with a few of the opposition members, you will want to try to talk with the most important ones, or the ones you're most likely to be able to persuade. What's the most efficient way of getting this information from the *Constcon* file?

Here are some possibilities for your delegation to consider:

- You could get a printout listing all of the delegates, sorted by state population. The states with the largest number of slaves are likely to want to include them for representation, are they not? What about the states in the middle of the list—those that are neither the larger slave states nor the smallest? Perhaps delegates in those states could be persuaded to go one way or another.
- In ROLE AT CONVENTION, some delegates are described as having a certain position on the subject of slave representation. You might get a list of all the delegates who have *..slave..* in their role description.

Lobbying for Your Position

Use the information you've obtained to pick out delegates to persuade to vote in favor of your position on the slavery issue. Use what you know about their interests and roles to try to make persuasive arguments for or against the decision to count slaves as "three-fifths of all other persons except Indians not paying taxes . . ." for representation purposes.

Voting on the Slavery Issue

At some point your teacher or George Washington will announce that it's time to take a vote on the slavery issue.

The chairperson for your delegation will make the official vote for your delegation by entering *YEA** or *NAY** into the *Constcon* file beside SLAVERY on his or her delegate form. Then each member of your delegation will enter *YEA* or *NAY* on his or her form in the file.

After all the delegations have voted, Major William Jackson will get a printout of the results. George Washington will announce the results to the convention.

ACTIVITY 9: SIGNING THE CONSTITUTION

Today is your historic moment. You get to sign the Constitution—if you agree to it.

Voting to Sign the Constitution

Edmund Randolph refuses to sign the Constitution, and James Wilson reads Ben Franklin's speech. Will you sign?

At some point your teacher or George Washington will announce that it's time to sign the Constitution.

Using the *Constcon* file, type *YEA* or *NAY* beside CONSTITUTION on Page 2 of your delegate's form.

After all the delegates have voted, William Jackson will get a printout of the results. George Washington will announce the results of the Convention. Compare your results with the actual historical record.

THE
CONSTITUTION

ACTIVITY 10: RATIFYING THE CONSTITUTION

The Convention is over, but your state has to ratify (approve) the Constitution before it becomes effective in creating a new federal government.

What You'll Do

You'll find out when your state ratified the Constitution. Then you'll enter that date in the *Constcon* file. After the ratification data for all of the states has been entered into the file, you'll get a printout showing the dates when each state officially made its decision.

Gathering the Data

Find out when your delegate's state ratified the Constitution. Your textbook or an encyclopedia should provide this information.

Write the date on paper in this form: YY/MM/DD. For example, if your state ratified the Constitution on December 20, 1787, you would write the date in this form: 87/12/20.

Updating the File

Update your delegate's form in the *Constcon* file by entering the date on Page 3 where it says WHEN STATE RATIFIED CONSTITUTION (YY/MM/DD).

Finding Out When All of the States Ratified the Constitution

After all of the states have ratified the Constitution and entered their dates in the file, you can use the file to get a list of all the states, listed in chronological order by when they ratified.

Setting Up a Pre-defined Print Spec

On your printout you'll want the states listed in chronological order by the date they ratified the Constitution. The data items you'll need will be the DELEGATION (STATE) and WHEN STATE RATIFIED CONSTITUTION.

Start up the *File* program in the usual manner. The PFS: File Function Menu is on your screen and the *Constcon* data disk is in Drive 1.

1. Select the PRINT function by typing *5*. Press **TAB**.
2. Type *Constcon*. Press **CTRL-C**. The PRINT Menu will appear.
3. Select Define Print Spec by typing *2*. Press **CTRL-C**. The Current Pre-defined Print Specs screen will appear.
4. Type your Print Spec name. This example uses RATIFY.
5. Press **CTRL-C**. The blank Print Spec form will appear on the screen.
6. Press **TAB** to move the cursor to DELEGATION (STATE).
7. Type *+*.
8. Press **CTRL-N** to get Page 2 of the form.
9. Press **TAB** to move the cursor to WHEN STATE RATIFIED CONSTITUTION (YY/MM/DD).
10. Type *XS*. (Remember that *S* stands for "sort.")
11. Press **CTRL-C** to store your Print Spec.

Printing the Data

The PFS: File Function Menu should be on your screen.

1. Type *5*, and then press **CTRL-C**. The Print Menu will appear.
2. Choose the Print Forms option by typing *1*. Press **CTRL-C**. The blank Retrieve Spec will appear. You'll want just the forms for the delegation chairman, so type **..*** (dot dot asterisk) beside DELEGATE.
3. Press **CTRL-C**. The Print Options Menu will appear.
4. Fill in the Print Options as shown below. Use **TAB** to get from one option to another.

   PRE-DEFINED PRINT SPEC: *RATIFY* (or whatever you've chosen)
   PRINT ITEM NAMES: *N*
   ADD LINEFEED CHARACTERS (Y/N): *Y*
   LINES PER PAGE: *2*
   NUMBER OF COPIES: *1*

5. Now press **CTRL-C**. The program begins searching the file for the forms you've requested, and then sorts the forms. Then printing begins.

Analyzing the Data

- Which state was first to ratify the Constitution? Which was the last?
- Nine states were needed to ratify in order for the Constitution to be valid. Which was the ninth state to ratify? When did it do so?
- One of the original 13 states is missing from your list. Rhode Island did not send a delegation to the Convention. Do you know why? Can you find out when Rhode Island ratified the Constitution?

ACTIVITY 11: DEBRIEFING

You and your classmates have spent several days reenacting the Constitutional Convention. You've learned a lot about that historic event. While you were playing the role of a delegate, you also helped to build a file of information about the events, people, and ideas involved in the making of the Constitution.

Now that the excitement of the actual Convention has died down, you still have the *Constcon* file to work with as you analyze what happened and why. You should have a partner to work with as you use the *Constcon* file to analyze what happened at the Convention.

What You'll Do

You'll choose certain questions to answer about your class's simulation of the Constitutional Convention. You'll decide whether the *Constcon* file can help you in answering the questions. You'll use the *Constcon* file and the *File* and *Report* programs to analyze the file in order to answer the questions.

What You'll Need

- A worksheet for planning reports or worksheet for planning printouts on pages 40 and 41.
- An Apple *II*e or IIc computer
- A printer
- A *Constcon* data disk
- A *File* or *Report* program disk
- A *Sortwork* disk (if using *Report*)

WORKSHEET FOR PLANNING REPORTS

Use this worksheet to plan a report from a *PFS* file using *PFS: Report*. After you answer the questions on this worksheet, take it to the computer and refer to it as you Pre-define a Report, set new headings, and then print the report.

Project or Student Name: ______________________________

Name of File: ______________________________

Defining Information Needs

What is the question or problem? ______________________________

____

What data item will be used to sort the report? ______________________________
(This data item will be in Column 1.)

What data item will go in each column? (For a Derived Column, write the formula.)

Column 1 ____________________
Column 2 ____________________
Column 3 ____________________
Column 4 ____________________
Column 5 ____________________
Column 6 ____________________

Pre-defining a Report

What will you name the Pre-defined Report (1–8 characters)? ____________________

Setting New Headings

List the new headings you will set for the columns.

Data Item Name	**New Heading**

Printing the Report

1. Set up the Retrieve Spec. Which forms will be selected for reporting? ____________________
____
2. Set up the Report Options. What title do you want printed at the top of each page of the report? ______________________________

Do you need to add linefeed characters for your printer (Y or N)? ____________________

WORKSHEET FOR PLANNING PRINTOUTS

Use this worksheet to plan printouts of data from a *PFS* file. After you answer the questions on this worksheet, take it to the computer and refer to it as you set up the Pre-defined Print Spec and then print the data.

Project or Student Name: ______________________

Name of File: ______________________

Defining Information Needs

What is the question or problem? ______________________

____

____

What data items will be included on the printout? ______________________

____

____

____

Which data item will be used for sorting the printout? ______________________

Setting Up a Pre-defined Print Spec

What will you name the Pre-defined Print Spec (1–8 characters)? ______________________

Printing the Data

1. Set up the Retrieve Spec. Which forms will be selected for printing? ______________________

____

2. Set up the Print Options. Will you print the item names (Y or N)? ______________________

Do you need to add linefeed characters for your printer (Y or N)? ______________________

How many lines do you need to print from each form page? ______________________
Use this number in the Lines Per Page option.

Some Questions to Consider

Working with a partner, choose one or more of the following questions to try to answer:

- How did you feel at the Convention? What was the process of putting together a Constitution like? Are the ideas discussed and debated at the Convention still important today?
- How many of your classmates "signed" the Constitution? Did the votes of your class delegations correspond to the actual historical votes?
- Did your classmates vote according to the goals of their delegations? Did your state achieve its goal at the convention?
- Which delegates were the most influential at the convention? What happened to them in their later political lives? How many became President? Supreme Court Justices? What happened to Robert Morris?
- Some historians claim that the Constitution was put together by a group of young men who had much to gain from the new political and economic system the Constitution would help bring about. What was the average age of the delegates? Their educational background? What was the average age of the delegates who played the important roles?
- What other interpretations have historians given to this event?

Write down the questions you'll try to answer.

Defining Your Information Needs

Decide what information you need in order to answer the question you're addressing. Then, determine where you can get that information. Some of the questions can be answered with a printout from *Constcon.* (For example, how many delegates signed the Constitution?) In other cases, the data in the file won't answer the question, but may help you analyze it. (For example, did the delegates vote according to their goals?) In still other cases, you may need to interview your classmates to get their opinions. (For example, did their state achieve its goals at the Convention?)

Make a list of the data items you'll need to help you answer your question or questions. Beside each data item, state where you think you can get the information.

Using the Constcon File to Get Information

If you don't need information from the *Constcon* file to answer your question, you can go ahead and work on your answers now.

If you do need information from the *Constcon* file that you can get by making a *File* printout, go ahead now and plan your printout. Use the worksheet for planning printouts to help you in your planning.

Planning a Report

This example will show you how to use the *Report* program to help answer a question.

> Question: Some historians have suggested that the Constitution was put together by a group of young men who had everything to gain from seeing the Constitution happen. Is this hypothesis true? What was the average age of the delegates? What was the extent of their education?

The *Report* program is useful for answering such a question, because it will perform the computations needed to figure out the ages of the delegates. It will also compute the average age.

Write down the problem on your worksheet for planning reports. If you can, write the problem in your own words rather than exactly the way it's stated above. For example, one student wrote on her worksheet, "Subtract each delegate's birth year from 1787 to get his age at the Convention. Then find the average of all the delegates' ages. Also list their education."

Defining Information Needs

What information is needed in order to answer the questions? Here are the data items you'll need:

DELEGATE
BIRTH YEAR
EDUCATION
Age of delegate (1787–BIRTH YEAR)

In planning a report, it's useful to make a hand sketch of the columns you want. Figure 6 shows a sketch of the report for this problem.

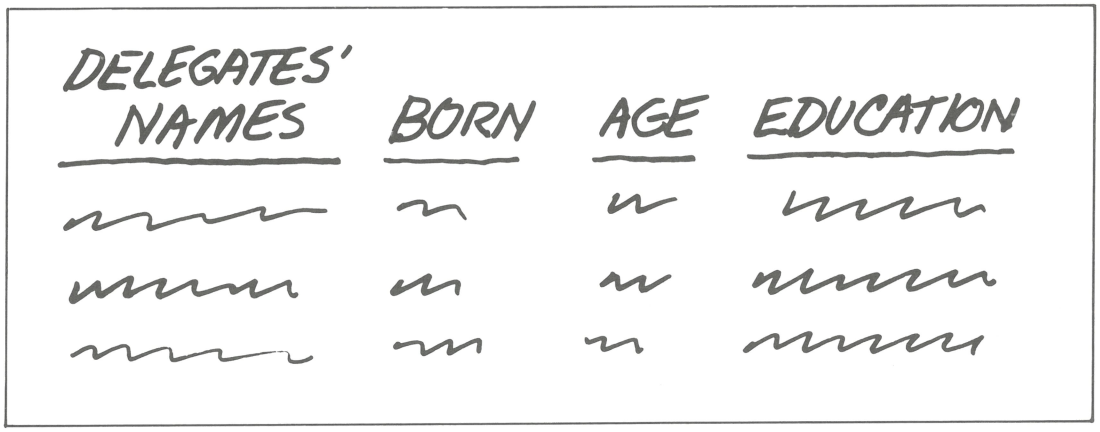


Figure 6

Deciding Which Data Goes in Column 1

The *Report* program puts the data in order based on which data item is in Column 1. You could list the delegates alphabetically by last name, or you could list them in order by age. This example puts the delegate's name in Column 1.

On your planning worksheet, write the data item that will be used for sorting. That data item will go in Column 1 of the report.

Deciding What Column Numbers to Use for the Other Data Items

On your planning worksheet, list the data items that will go in each column of the report. In this example, DELEGATE is in Column 1, BIRTH YEAR is in Column 2, AGE (the Derived Column) will be in Column 3, and EDUCATION will be in Column 4.

Column 3 will be a Derived Column. A Derived Column is one the *Report* program "makes up" through calculations. Column 3 will be the result of subtracting Column 2 from 1787. The formula for the Derived Column is 1787–#2.

Choosing a Report Spec Name

You'll need a name for the Pre-defined Report. It must be eight characters or less. This example will use AGES.

Write the name of your Pre-defined Report on your planning worksheet.

Deciding on Headings for the Columns

The *Report* program uses the data item names from the form as the column headings on the report. But often the data item names in the file are too long to fit as column headings. When you are deciding on headings for your columns, you need to think about how wide the actual data will be in the column. For example, the birth year is only four characters wide (e.g., 1722). But the data item name BIRTH YEAR is ten characters wide. To make a tidy report, make up column headings that are about the same width as the data for that column.

On your planning worksheet, list the new headings you will set for your columns. The following are used in this example:

Data Item Name	**New Heading**
DELEGATE	Name
BIRTH YEAR	Born

For the Derived Column, the heading will be Age.

Deciding on a Retrieve Spec

Which of the forms in the file will be selected for the report? We want to know the average age of the delegates, so we'll want to include all the delegates in our report. When you want all the forms included in a report, you leave the Retrieve Spec blank.

Write the Retrieve Spec on your planning sheet (Question 1 under Printing the Report).

Choosing a Title for the Report

Decide on a title for the report. The program will print the title at the top of each page of the report (32 characters or fewer). This example will use "Ages of the Delegates" as the title.

Write on your planning worksheet the title you will use for your report.

Completing the Planning Worksheet

There is one more little detail you need to plan before your worksheet is complete. Do you know whether your printer needs to have a linefeed character sent to it by the program? If you're not sure, the safest approach is to say yes. If you find that your reports have too many spaces between lines, you know you did not need the linefeed.

Your plan is now complete. If you don't have time to finish this activity today, this is a good breaking point.

Setting Up the Report on the Computer

Now that you have planned your report, you are ready to prepare the report on the computer. Take your planning worksheet to the computer with you.

Starting up the Report program

1. Place the *Report* program disk in Drive 1.

2. If the computer is turned off, turn it on. Turn on the monitor. If the computer is already on, press these three keys all at once: **CTRL**, **OPEN APPLE**, and **RESET**.

3. When the PFS: Report Menu appears on the screen, remove the *Report* program disk from the disk drive.

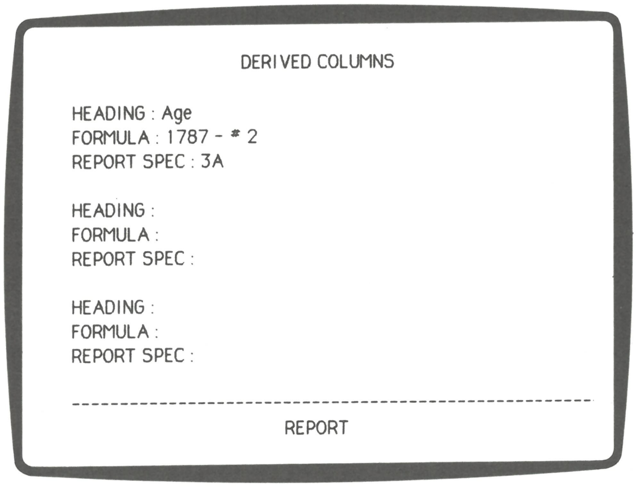
4. Insert the *Constcon* data disk in Drive 1.

5. Insert the *Sortwork* disk in Drive 2.

Pre-defining a Report

The PFS: Report Menu is on your screen.

1. Type *2* to select PRE-DEFINE A REPORT. Press **TAB**.
2. Type the file name, *Constcon*. Press **CTRL-C**. The Pre-defined Report screen will appear.
3. Type your Pre-Defined Report Name, *AGES*. Press **CTRL-C**. The blank Report form appears.
4. On the Report form, type *1* next to the DELEGATE data item. This will cause the *Report* program to put the delegate's name in Column 1 of the report.
5. Press **CTRL-N** twice to get Page 3 of the form.
6. Press **TAB** to move the cursor to BIRTH YEAR. Type *2*. This tells the program you want the birth year listed in Column 2.
7. Press **TAB** to move the cursor to EDUCATION. Type *4*.
8. Press **CTRL-D**. The Derived Columns screen appears.
9. Fill in the Derived Columns screen as shown in Figure 7.



```
                    DERIVED COLUMNS

  HEADING : Age
  FORMULA : 1787 - # 2
  REPORT SPEC : 3A

  HEADING :
  FORMULA :
  REPORT SPEC :

  HEADING :
  FORMULA :
  REPORT SPEC :

  -------------------------------------------------------
                       REPORT
```

Figure 7

10. The Report Spec: *3A* will tell the program to put this Derived Column in Column 3, and to compute the average of all the ages (the *A* stands for "average").
11. When the Derived Columns screen is filled in, press **CTRL-D**. Look over your Report Spec to see that it is complete and accurate.
12. Press **CTRL-C** to store the Report Spec. The PFS: Report Menu will appear.

Setting New Column Headings for the Report

Now you set new headings for the columns. Here's the procedure:

The PFS: Report Menu is on the screen.

1. Type *3* to select Set New Headings. Press **CTRL-C**. The Headings blank form will appear.
2. Beside DELEGATE on Page 1 of the form, type *Name*.
3. Get Page 3 of the form by pressing **CTRL-N**.
4. Beside BIRTH YEAR, type *Born*.
5. Press **CTRL-C** to store the new headings. The PFS: Report Menu will appear on the screen.

Printing the Report

You're ready now to print the report. Make sure the printer is turned on and the paper is aligned in the printer.

The PFS: Report Menu is on your screen.

1. Type *1* to select Print a Report. The blank Retrieve Spec form will appear.
2. Recall from your planning worksheet that you are going to leave the Retrieve Spec blank for this report, because you want to include all the delegates in the report.
3. Press **CTRL-C**. The Report Options screen will appear.
4. Refer to your planning worksheet to see what title you planned for your report. Type the title of your report. Press **TAB**.
5. Type your Pre-defined Report Name. This example uses AGES, but you should use the name you wrote on your planning worksheet.
6. If your printer requires a linefeed, press **TAB** to move the cursor to the ADD LINEFEED CHARACTERS option, and type *Y*. Press **CTRL-C**.

The *Report* program begins selecting the forms for printing. When the printout is complete, finish the session on the computer in the usual manner. Put the disks where they belong.

Analyzing the Report

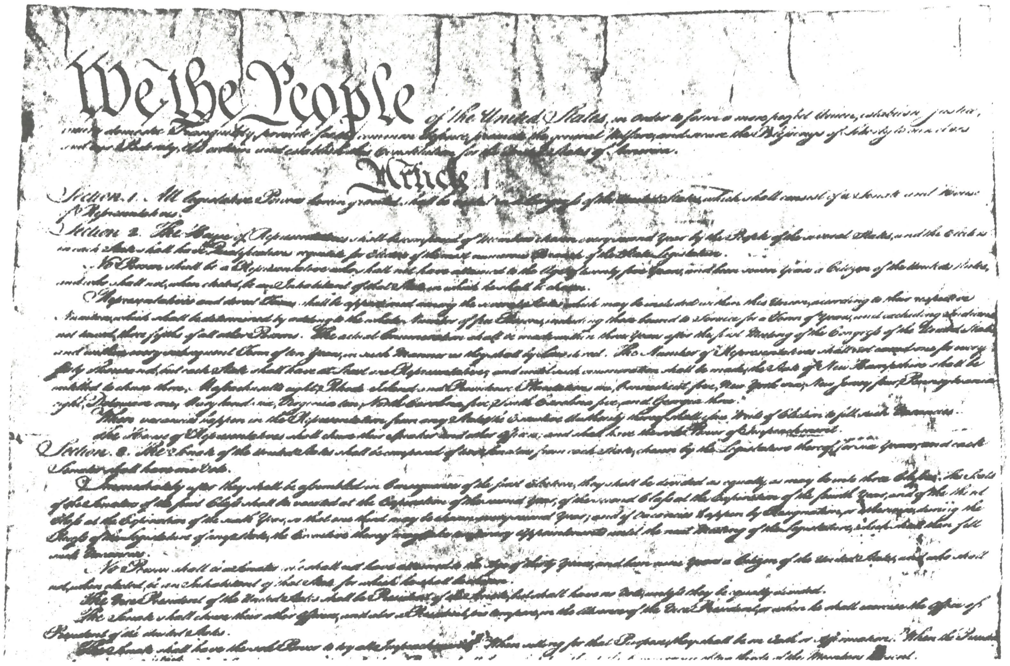
Go back to the original problem statement. The hypothesis was that the Constitution was put together by young men with their careers ahead of them, who had everything to gain from the new government.

Does the data in your report support this hypothesis? What was the average age of the delegates? How many of the delegates were aged 40 or younger?

What additional information might you look for to determine whether the delegates later became successful in business or government careers? Based on what you find out, do you think the delegates to the convention actually did benefit from the new government? In what ways?

On Your Own

Now return to the questions on page 42. Can you plan a printout on your own?



We the People

Article 1

Scholastic pfs®:
U.S. Government
Data Bases

Federal Spending

FEDERAL SPENDING: LESSON PLANS

Overview

The *Federal Spending* file contains data about the budget of the United States government. It includes information on federal income and expenditures, the public debt, the federal deficit, and the budgets of federal agencies.

Key Topic Areas in American Government

Major topics covered are federal budget, economics, and Twentieth-Century America.

Description of File Contents and Organization

The *Fedspend* form on disk is three pages (screens) long. Figure A on page 4 shows Page 1 of the form. Each form contains statistics for one YEAR.

Page 1

The PRESIDENT appears on Page 1. For each YEAR, data on the form includes information about who was PRESIDENT, the President's political PARTY, and information about the party make-up of CONGRESS. Also provided are statistics for %GNP (percent of gross national product), FEDERAL SPENDING, the SURPLUS/DEFICIT, and PUBLIC DEBT.

Page 2

Page 2 contains information on FEDERAL SPENDING BY AGENCY/DEPARTMENT. Also included are data on the number of CIVIL and MILITARY federal employees.

Page 3

Page 3 of the form shows data for FEDERAL INCOME from selected sources, including INCOME TAX and EXCISE TAX.

Page 4

Page 4 of the form shows the sources of information (references) used to gather the data contained in the file.

Grade Level Suggestions

Students in grades six through eight may want to work only with the data on Pages 1 and 2. High school students and advanced junior high school students may want to work with the data on all four pages of the form.

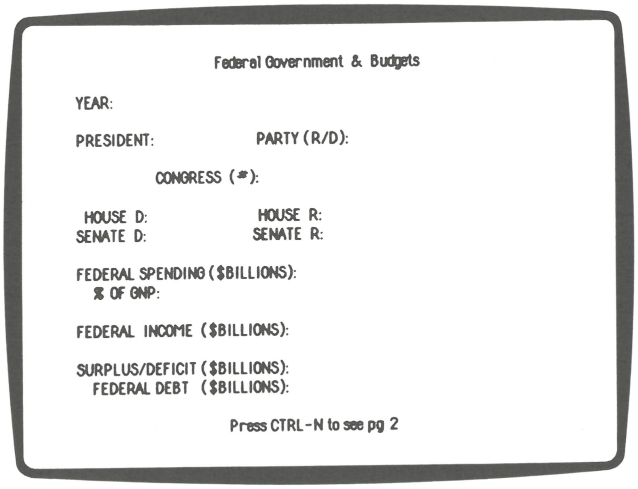
For younger students (below high school), you may decide to use just the first five activities; high school students should continue on through Activity 10.

Hardware Needed

Each activity lists what equipment and software are needed. All of the activities require an Apple *IIe* or IIc computer with monitor and one disk drive. Activities 4 through 10 require a printer. Activities 7 through 10 require a second disk drive.

Classroom Management

Before each activity, make copies of the print materials and distribute them to the students. Then refer to the activity-by-activity lesson plans. These are in chart form. They will tell you the major objective of each activity, how much time to allot, and how to prepare for and manage each one.



```
                    Federal Government & Budgets

YEAR:

PRESIDENT:               PARTY (R/D):

          CONGRESS (#):

 HOUSE D:                HOUSE R:
SENATE D:               SENATE R:

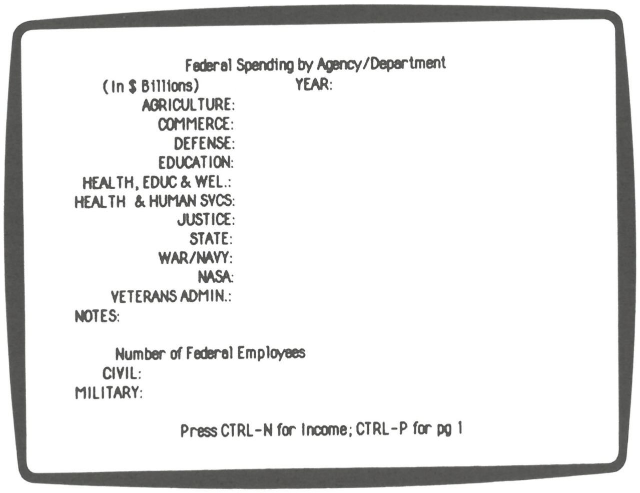
FEDERAL SPENDING ($BILLIONS):
  % OF GNP:

FEDERAL INCOME ($BILLIONS):

SURPLUS/DEFICIT ($BILLIONS):
  FEDERAL DEBT ($BILLIONS):

                     Press CTRL-N to see pg 2
```

Page 1

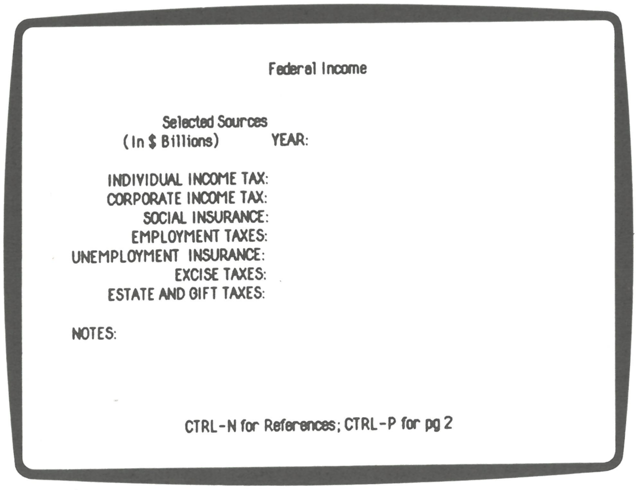


```
                 Federal Spending by Agency/Department
    (In $ Billions)            YEAR:
              AGRICULTURE:
                 COMMERCE:
                  DEFENSE:
                EDUCATION:
 HEALTH, EDUC & WEL.:
HEALTH & HUMAN SVCS:
                  JUSTICE:
                    STATE:
                WAR/NAVY:
                     NASA:
     VETERANS ADMIN.:
NOTES:

     Number of Federal Employees
    CIVIL:
MILITARY:

              Press CTRL-N for Income; CTRL-P for pg 1
```

Page 2



```
                          Federal Income

              Selected Sources
          (In $ Billions)        YEAR:

     INDIVIDUAL INCOME TAX:
     CORPORATE INCOME TAX:
          SOCIAL INSURANCE:
        EMPLOYMENT TAXES:
UNEMPLOYMENT INSURANCE:
             EXCISE TAXES:
   ESTATE AND GIFT TAXES:

NOTES:


              CTRL-N for References; CTRL-P for pg 2
```

Page 3   Figure A

Federal Spending
Activity-by-Activity Lesson Plan Chart

Activity	Objectives	Preparation	Management	Time (per student)
1.	• Discover main topics and facts in the *Fedspend* file. • Retrieve information from the file. • Type Retrieve Specs. • Interpret data.	• Copy the *Fedspend* file from the master disk onto the working disks.	• Assign student pairs. • Schedule time on computer for student pairs. • Define terms for students: "GNP" and "surplus/deficit"	35 minutes
2.	• Categorize budgets of the federal government. • Explore a file. • Set up Retrieve Specs.	• Copy the *Fedspend* file from the master disk onto the working disks.	• Schedule time on computer for student pairs. • Introduce concepts such as the Presidential Cabinet.	25 minutes
3.	• Develop questioning skills. • Develop strategy to find answers to questions. • Determine information needs. • Set up Retrieve Specs: exact match, partial item match, multiple item match. • Narrow the search.	• Copy the *Fedspend* file from the master disk onto the working disks.	• Schedule time on computer for student pairs. • Brainstorm questions with students.	35 minutes

(Continued on next page.)

Federal Spending
Activity-by-Activity Lesson Plan Chart

Activity	Objectives	Preparation	Management	Time (per student)
4.	• Identify data needed to answer questions about federal spending. • Sequence and analyze historical data. • Analyze and interpret results of data collected. • Plan and interpret printout.	• Copy the *Fedspend* file from the master disk onto the working disks. • Set up the printer.	• Schedule time on computer for student pairs. • Assist students in debugging printouts.	45 minutes
5.	• Define historical questions. • Determine information needs. • Discover trends. • Plan and interpret printout.	• Copy the *Fedspend* file from the master disk onto the working disks. • Set up the printer.	• Schedule time on computer for student pairs. • Assist students in debugging printouts.	45 minutes
6.	• Determine data needed to test a hypothesis. • Validate data. • Discover trends. • Plan, test, debug, revise, and interpret printout.	• Copy the *Fedspend* file from the master disk onto the working disks. • Set up the printer.	• Schedule time on computer for student pairs.	35 minutes
7.	• Discuss implications of research, and propose additional hypotheses. • Propose a course of action based on research results. • Estimate adequacy of information collected.	• Copy the *Fedspend* file from the master disk onto the working disks. • Provide student with copies of worksheet for planning printouts. • Set up the printer.	• Schedule time on computer for student pairs. • Assist with management of disks containing Pre-defined Report Specs.	35 minutes (Consider using two class periods.)

(Continued on next page.)

Federal Spending
Activity-by-Activity Lesson Plan Chart

Activity	Objectives	Preparation	Management	Time (per student)
8.	• Identify a historical question or problem. • Determine statistical data required to answer questions. • Synthesize research. • Plan a report with Derived Columns. • Interpret a report.	• Copy the *Fedspend* file from the master disk onto the working disks. • Provide students with copies of worksheet for planning printouts. • Set up the printer.	• Schedule time on computer for student pairs. • Help students choose their projects. • Assist students in debugging printouts.	45 minutes
9.	• Define a historical problem. • Identify data needed to analyze problem. • Display the problem in graph form. • Discover trends. • Infer cause-and-effect relationships. • Prepare and interpret graph of data.	• Copy the *Fedspend* file from the master disk onto the working disks. • Provide students with copies of worksheet for planning printouts. • Set up a printer that will print graphics. • Provide students with graph paper if *PFS: Graph* is not available.	• Schedule time on computer for student pairs. • Help students choose their projects. • Assist students in debugging printouts.	45 minutes
10.	• Define a historical problem or question. • Identify data needed to answer questions. • Analyze and interpret results of data collected. • Synthesize research.	• Copy the *Fedspend* file from the master disk onto the working disks. • Provide students with copies of worksheet for planning printouts. • Set up the printer.	• Schedule time on computer for student pairs. • Help students choose their projects. • Assist students in debugging printouts and reports.	Time will vary, depending on complexity of project.

INTRODUCTION

This series of activities shows you some of the ways you can use the data file named *Fedspend*. The file contains information about federal budgets and spending priorities.

These activities will help you learn more about the federal government, and teach you skills in managing information stored in computer data files. You can apply these skills to many other subjects in school and to other areas of your personal life.

Here are some questions you can answer using the *Fedspend* file:

- Examine the growth in the number of federal civil employees. In what years did the size of the federal bureaucracy increase the most? Why do you think this occurred?
- Examine the growth in the number of federal military employees. In what years did the size of the military increase the most? Does the increase correspond to the times when America was at war?
- Examine the total federal spending relative to the gross national product. Does the trend show the federal government taking a larger portion of the GNP? How do you account for this?
- What is the relationship between federal spending and federal income over time? Can you create a graph to illustrate this concept?
- What has happened to the federal deficit over time?
- Under which Presidents was the deficit the greatest? Is there a relationship between the political party in power and the size of the deficit? Does the party in control of Congress make a difference? If not, what does?
- What is the growth pattern of the public debt? Predict what will happen to the public debt in the next ten years, based on past data.
- The federal budget reflects the priorities of the government in power. Make a chart which shows the spending priorities for each of the following years: 1932, 1944, 1952, 1960, 1964, 1972, and 1980.
- When did spending for education show a dramatic increase? Why?
- When did spending on the space program show a dramatic increase? Why?
- Is more money spent on defense, or on health and human services?
- What is the largest source of federal revenue? Has this changed over time?

There is practically no limit to the number and kinds of questions you can study—it depends on your curiosity and willingness to experiment.

Activities in this Unit

The first six activities in this unit use the *PFS: File* program and the *Fedspend* data file. The first activity is for people who are not yet familiar with the *File* program. If you already know how to use *File*, you can skip Activity 1.

All of the data in this file are statistical information—that is, facts and figures rather than text. The *PFS: Report* program is very helpful in analyzing and printing the data. Activities 7 and 8 show you how to use the *Report* program with the *Fedspend* file. Statistical kinds of data are often easier to study when they appear in the form of a graph. Activity 9 shows how to prepare graphs of the data using the *PFS: Graph* program. If you don't have *Graph*, you can draw your own graphs by hand. Activity 10 suggests a few of the many interesting projects you can do on your own or as part of a class project.

The following is a list of the activities in this unit. Please do the activities in the order shown here.

Activity 1: Finding Your Birth Year in the File
Activity 2: Exploring the *Fedspend* File
Activity 3: Asking Questions
Activity 4: Defining Your Information Needs
Activity 5: Planning Your Own Printouts
Activity 6: Analyzing Results and Getting More Data
Activity 7: Planning Your Reports
Activity 8: Planning Reports With Computations
Activity 9: Graphing Data
Activity 10: Projects

ACTIVITY 1: FINDING YOUR BIRTH YEAR IN THE FILE

You can do this activity whether or not you've used the *File* program before. You'll learn a little about federal spending and a little about the *File* program.

What You'll Do

First, you'll start up the *File* program. If you don't already know how to do this, now is the time to learn. Next, you'll get information about the year you were born, and learn some things about how to get data on to your screen. The fancy phrase for what you'll do is "information retrieval."

What You'll Need

- A *File* data disk called *Fedspend*
- A *File* program disk
- An Apple *II*e or IIc computer

Starting Up the File Program

The following is the standard procedure for starting up the *File* program.

1. Remove the *File* program from its protective jacket and insert it into Drive 1. (On an Apple IIc, Drive 1 is the built-in drive). Close the door on the disk drive.

2. If the computer is off, turn it on. Turn on the monitor. If the computer is already on, press the **CTRL**, **OPEN APPLE**, and **RESET** keys all at the same time. The PFS: File Function Menu will appear on the screen.

3. Remove the *File* program disk from Drive 1. You won't need it any more in this lesson.

4. Insert the *Fedspend* data disk into Drive 1 and close the door on the disk drive.

That's the end of the start-up procedure. Use this procedure any time you start up *File*.

CAUTION: Never remove the disk from the disk drive or turn the computer off unless the PFS: File Function Menu is on the screen.

Selecting the SEARCH/UPDATE Function

The PFS: File Function Menu is on your screen. It lists six functions. The only function we're going to use right now is the SEARCH/UPDATE. This is the part of the *File* program you use to find information that is stored in a file on a data disk.

Procedure for Selecting the SEARCH/UPDATE Function:

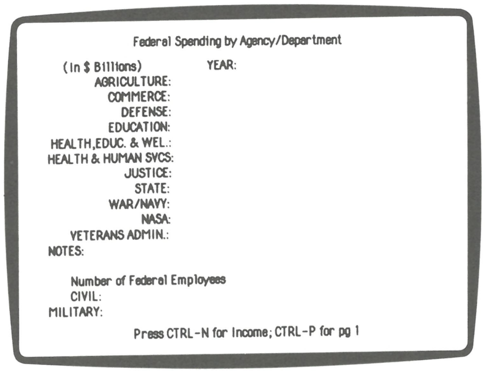
1. Select SEARCH/UPDATE by typing *4*.

2. If FILE NAME is blank, leave it blank. If it says FILE NAME: *Fedspend*, that's okay, too. You don't need to type a file name when you choose SEARCH/UPDATE. The program will look at the file in Drive 1, and find out what the file name is.

3. Press **CTRL-C**. (Hold down **CTRL** and press **C**.) A blank Retrieve Spec will appear on the screen. Check to see that the words RETRIEVE SPEC are at the bottom of the screen. If they're not, press the **ESC** key and start over with Step 1.

Figure 1 on page 12 shows the form for this file. The form on your screen should look like this. If it doesn't, you have the wrong file disk. Find the file disk labeled *Fedspend* and start over.

You've just completed the procedure for selecting the SEARCH/UPDATE function. From now on, when we say something like "select SEARCH/UPDATE from the PFS: File Function Menu," follow the procedure you have just learned.



```
             Federal Spending by Agency/Department

   (In $ Billions)          YEAR:
       AGRICULTURE:
          COMMERCE:
           DEFENSE:
         EDUCATION:
HEALTH,EDUC. & WEL.:
HEALTH & HUMAN SVCS:
           JUSTICE:
             STATE:
          WAR/NAVY:
              NASA:
    VETERANS ADMIN.:
NOTES:

    Number of Federal Employees
    CIVIL:
MILITARY:
             Press CTRL-N for Income; CTRL-P for pg 1
```

Figure 1

Find the Year You Were Born

The blank Retrieve Spec is on your screen.

1. With the cursor next to YEAR, type the year you were born. For example, if you were born in 1970, type *1970*.

2. Press **CTRL-C**. The form for your birth year will appear.

After the YEAR, the first data item is PRESIDENT. Who was the President in the year you were born?

Was that President Democratic (D) or a Republican (R)?

Next comes some information about the Congress in that year. Were there more Democrats or Republicans in the House of Representatives that year? What about in the Senate?

FEDERAL SPENDING ($ BILLIONS) is an important data item in this file. To see what the actual number is, change the decimal point to a comma and add eight zeros. For example, in 1971 federal spending was 210.2 billion. This converts to $210,200,000,000.

The next data item name is % OF GNP. GNP stands for gross national product, the total value of the goods and services produced in the United States in a given year. The % of GNP is the percent of the gross national product spent by the federal government.

REMINDER: If you accidentally change any data on the form, press ***ESC*** *to avoid changing the data on the disk.*

Did the government spend more than its income in the year you were born? You can determine the answer to this in two ways. You can compare FEDERAL INCOME to FEDERAL SPENDING, and see which is larger, or you can look at SURPLUS/DEFICIT. If SURPLUS/DEFICIT is a negative number, you know there was a deficit.

Look at the next-to-last data item on the page—PUBLIC DEBT ($ BILLIONS). The public debt is the amount of money the federal government owes its creditors. What was the public debt in the year you were born? (Write it out, with all the zeros.)

Getting the PFS: File Function Menu

When you're finished looking at a form that you have on your screen and you want to get the PFS: File Function Menu again, press **ESC**. The menu will appear.

Finding the Year Your Mother was Born

Do you know what year your mother was born? If you don't know, then guess around 1945. Look up the data for that year.

The PFS: File Function Menu is on your screen.

1. Type *4*, and then press **CTRL-C**. The Retrieve Spec will appear.

2. Type either the year your mother was born or *1945*.

3. Press **CTRL-C**. What year is on your screen?

- What was federal spending in that year? Compare it to federal spending in the year you were born. Based on this information, do you think that federal spending has been increasing over the past 30 or 40 years?
- What was the public debt in the year your mother was born?

4. When you're finished looking at the form, press **CTRL-C**. The PFS: File Function Menu will appear.

Based on what you have seen so far, can you guess what the federal spending was by 1983?

Test your guess by looking up the form for 1983. This time, you should be able to find the form without having a written procedure to follow.

- What was federal spending in 1983?
- What was the % OF GNP in 1983?
- What was the federal deficit in 1983?
- What was the public debt in 1983?

Discuss with your partner the difference between the federal deficit and the public debt. See if you can figure out how the deficit was calculated for 1983.

When you're finished looking at 1983, press **ESC**. The PFS: File Function Menu will appear.

Finding the Percent of GNP

Were there any years when the % OF GNP was higher than it was in 1983? Here's how to find out:

The PFS: File Function Menu is on your screen.

1. Type *4*, and then press **CTRL-C**. The Retrieve Spec form will appear.

2. Press **TAB** to move the cursor to % OF GNP, and then type >. This is the sign for "greater than."

3. Type the percentage you found earlier for 1983.

4. Press **CTRL-C**. A data form will appear on your screen.

   - What is the year on the form?

   - What is the % OF GNP?

   - Is it higher than in 1983? If not, you used the wrong Retrieve Spec. Press **ESC** and go back to Step 1 of this procedure.

   - Why might the % OF GNP have been so high that year?

5. Press **CTRL-C**.

6. Keep looking at the years and then pressing **CTRL-C**, until a message appears telling how many forms were found. How many forms were found?

7. Press **CTRL-C**. The PFS: File Function Menu will appear.

On Your Own

Use the *Fedspend* to find out when the public debt first became higher than one trillion dollars. One trillion is one thousand billion.

Are there any years in the *Fedspend* file in which the public debt was less than one hundred billion dollars? Which years?

Finishing Up

When you've finished with this activity, be sure the PFS: File Function Menu is on the screen. If it isn't, press **ESC**. Then remove the *Fedspend* data disk from Drive 1 and return it carefully to its protective jacket. Put the disk where your teacher tells you to keep it. Then turn off the computer.

ACTIVITY 2: EXPLORING THE FEDSPEND FILE

Whenever you use a computer data file that's new to you, the first thing you should do is explore it. Find out what kinds of data are in it, and how the data are organized.

Let's explore the federal government and budgets for a while, to become familiar with our data.

What You'll Do

First you'll start up the *File* program. Then you'll browse through the *Fedspend* data file to find out what kinds of data are in the file.

What You'll Need

- An Apple *IIe* or IIc computer
- A *File* program disk
- A *Fedspend* data disk

Starting Up the File Program

Start up the *File* program. If you don't remember how to do this, see Activity 1 or the Quick Guide.

The PFS: File Function Menu should be on your screen.

Looking at a Form

You may not know what information is in this file. You might guess, however, that a file on the subject of federal budgets and spending would probably have the information organized by year.

To look at a form for a particular year, do the following:

The PFS: File Function Menu is on your screen.

1. Type *4* to select SEARCH/UPDATE.
2. Press **CTRL-C**. The Retrieve Spec for the *Fedspend* file should appear on the screen. If it doesn't, you're using the wrong data disk. Find the right one and start over.
3. Beside the data item name YEAR on the Retrieve Spec, type *1980*.
4. Press **CTRL-C**. The form for 1980 should be on your screen.

REMINDER: If you accidentally change any data on the form, press **ESC** *to avoid permanently changing the form on the disk.*

5. Press **CTRL-N** to see the data for Federal Spending by Agency/Department.

What agency or department spent the most money in 1980? What was the amount spent by the department?

6. Press **ESC** to get the PFS: File Function Menu on the screen.

Browsing Through the File

Since you don't know much about the information in a file that is new to you, you don't know what Retrieve Specs to set up. A good way to find out what's in the file is to just browse though it, form by form. This is similar to the way you might browse through a book to see what's in it. Here's the procedure for doing that:

The PFS: File Function Menu is on your screen.

1. Type *4* to select SEARCH/UPDATE.
2. Press **CTRL-C**. The Retrieve Spec blank form appears.
3. Leave the Retrieve Spec blank. Press **CTRL-C**. The last form in the file appears on the screen. Notice the form number. This tells you the total number of forms in the file.
4. Press **CTRL-N** to see the next page of the form. Take note of the title of the page.
5. Press **CTRL-N** again. What is the title of Page 3 of the form?

Look at the various sources of federal income. Which source provided the greatest amount of income in 1983?

6. Press **CTRL-N** again. What information is on Page 4 of the form?
7. When you are finished looking at a form, press **CTRL-C**. The next form will appear.
8. Keep browsing through the file, reading forms and pressing **CTRL-C**. When you feel you've looked at enough forms, press **ESC**. The PFS: File Function Menu will appear.

On Your Own

Find out how many federal civilian employees there were in 1930. How many were there by 1940? Can you explain this large increase?

Finishing Up

When you're finished with this activity, be sure the PFS: File Function Menu is on the screen. If it isn't, press **ESC**. Then remove the *Fedspend* data disk from the disk drive and return it carefully to its protective jacket. Put the disk where your teacher tells you to keep it. Then turn off the computer.

ACTIVITY 3: ASKING QUESTIONS

Now that you know what data are in the file, you can begin asking questions and setting up Retrieve Specs to find the answers.

What You'll Do

In this lesson you'll retrieve information about federal budgets and spending. Then you'll learn how to set up Retrieve Specs to answer questions.

What You'll Need

- An Apple *IIe* or IIc computer
- A *File* program disk
- A *Fedspend* data disk

Starting Up the File Program

Start up the *File* program. The PFS: File Function Menu is on your screen and the *Fedspend* data disk in Drive 1.

Narrowing the Search

When you're looking for the data to answer a question, you don't want to retrieve more information than you need. In some situations you need to figure out a way to narrow the search. "Narrow the search" means to set up a Retrieve Spec in such a way that you will retrieve only the data you need in order to answer your question. In this exercise, you'll try using two different methods for retrieving the answer to a question. The first method retrieves too many forms; the second method narrows the search.

Consider the following question:

> Question: When was the first year in which NASA (National Aeronautics and Space Administration) spent more than one billion dollars?

Here is one method for searching for the answer to that question.

The PFS: File Function Menu is on your screen.

1. Select SEARCH/UPDATE by typing *4*.

2. Press **CTRL-C**. The blank Retrieve Spec form for the *Fedspend* file will appear.

3. Press **CTRL-N** to see Page 2 of the *Fedspend* form.

4. Press **TAB** to move the cursor to NASA.

5. Type *> 1*.

6. Press **CTRL-C**. A data form will appear on the screen. What year is it?

7. Press **CTRL-N** to get to Page 2. What was the NASA budget in that year?

8. Press **CTRL-C**. What year appears this time? What was the NASA budget in this year?

9. Continue pressing **CTRL-C** until you find the earliest year in which NASA had a budget greater than one billion. When was that?

When you're finished, the PFS: File Function Menu will be on the screen.

In order to answer the question, "When was the first year in which NASA had a budget of over one billion?" you had to look at a lot of forms. In the next exercise, you'll use a faster method.

Narrowing the Search for Data

You want to find the *first* year NASA had a budget of over one billion dollars. You don't want to look at all the forms for the years in which the budget was greater than one billion dollars; instead, you just want to see the years in which it was closest to one billion. One way to narrow the search is to look for a narrow range. Rather than looking at *all* the forms in which the NASA budget was greater than one billion, we can look at just the times when the NASA budget was between one billion and two billion dollars. This is called looking for a numeric range. Here's the procedure:

If the PFS: File Function Menu is not on your screen, press **ESC** to get it.

1. Select SEARCH/UPDATE by typing *4* and pressing **CTRL-C**. The blank Retrieve Spec will appear.

2. Press **CTRL-N** to get to Page 2.

3. Press **TAB** to move the cursor to NASA.

4. Type *=1..2* (equal sign 1 dot dot 2).

5. Press **CTRL-C**. A form will appear on your screen. What year did you retrieve? Look at Page 2 of the form. What was the NASA budget in that year?

6. Press **CTRL-C**. This message will appear: Forms Found: 1. Press **CTRL-C** to continue.

As you can see, this search was much more efficient in finding a particular piece of information. Of course, the more you know about your subject, the more efficient your search can be.

Setting Up Your Own Retrieve Specs

Now that you know what data items are on the *Fedspend* form, you can begin asking questions and setting up Retrieve Specs to search for the answers.

Set up Retrieve Specs to search for answers to these questions:

Question: Was there ever a time when the federal government had a surplus rather than a deficit?

Your Retrieve Spec would be:

SURPLUS/DEFICIT > *0*

Question: When did the public debt first exceed 100 billion dollars?

What would your Retrieve Spec be?

Question: What was the public debt in 1983?

What would your Retrieve Spec be?

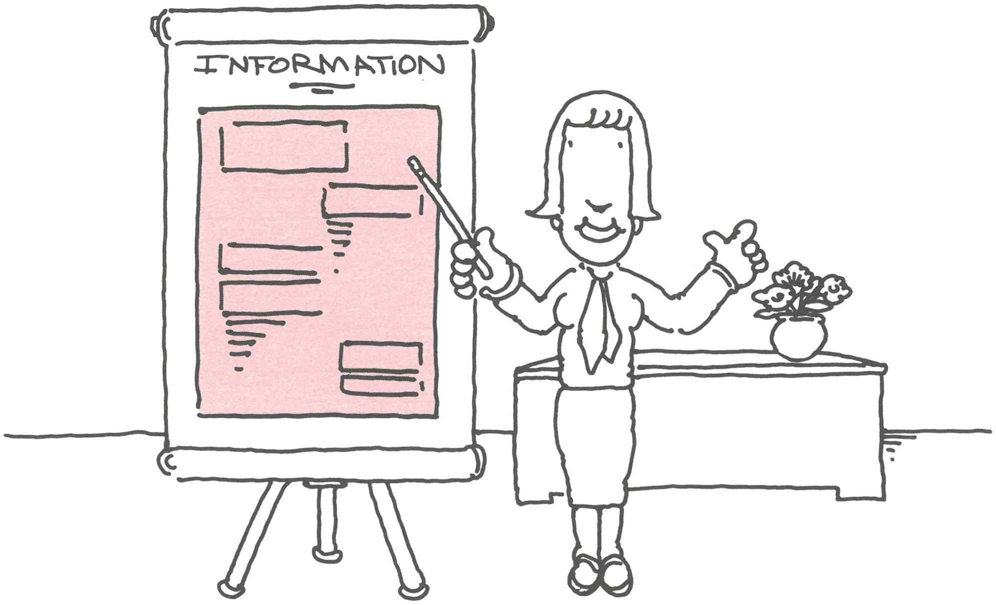
Challenging Your Partner

Make up a question and figure out what Retrieve Spec you would use to answer the question. Try out your Retrieve Spec and see what answers you get. Then ask your partner to answer the same question, but don't explain the method you used to get the answer. Can your partner solve the problem? Did your partner think of a method different from yours?

Finishing Up

If the PFS: File Function Menu isn't on the screen, press **ESC** to get it there. Remove the *Fedspend* disk from Drive 1 and put it in its protective jacket. Turn off the computer unless someone else is waiting to use it. Put the disk where your teacher tells you to keep it.

ACTIVITY 4: DEFINING YOUR INFORMATION NEEDS



Rather than retrieving forms one at a time on the computer screen, you can have the *File* program print out a list of selected information for a particular study.

What You'll Do

In this activity, you'll learn to plan a printout of data that will help you answer questions and solve problems. You'll use a worksheet for planning printouts, shown on page 22.

Here is the procedure:

1. Define what information you need in order to answer a question.
2. Set up a Print Spec that tells the *File* program what information to print.
3. Use the Print Forms option of the PRINT function to get the data printed out on paper.
4. Interpret the results of the printout and decide whether you need more information to answer your question.

What You'll Need

- A worksheet for planning printouts
- An Apple *IIe* or IIc computer (See page 22.)
- A *File* program disk
- A *Fedspend* data disk
- A printer

WORKSHEET FOR PLANNING PRINTOUTS

Use this worksheet to plan printouts of data from a *PFS* file. After you answer the questions on this worksheet, take it to the computer and refer to it as you set up the Pre-defined Print Spec and then print the data.

Project or Student Name: ______________________

Name of File: ______________________

Defining Information Needs

What is the question or problem? ______________________

What data items will be included on the printout? ______________________

Which data item will be used for sorting the printout? ______________________

Setting Up a Pre-defined Print Spec

What will you name the Pre-defined Print Spec (1–8 characters)? ______________________

Printing the Data

1. Set up the Retrieve Spec. Which forms will be selected for printing? ______________________

2. Set up the Print Options. Will you print the item names (Y or N)? ______________________

Do you need to add linefeed characters for your printer (Y or N)? ______________________

How many lines do you need to print from each form page? ______________________
Use this number in the Lines Per Page option.

Defining Your Information Needs

The first step in planning a *File* printout is to define what information you need in order to answer a particular question or problem. For example, consider the following question:

> Question: The period called the Great Depression in the 1930s was characterized by a very high rate of unemployment, decline in the gross national product, and a reduction in workers' wages. You would expect a corresponding decrease in the amount of money the government was able to collect in individual income taxes, and a decline in the federal income. At what point during the years from 1930 to 1937 was federal income the lowest?

You could get the answer to this by retrieving on the screen the forms for each of the years in question. But it is easier, quicker, and more useful to get a printout that contains just the data you want to help answer the question.

On your worksheet for planning printouts, write the question you are trying to answer.

Deciding Which Forms to Select for Printing

The first thing you should decide is which forms to select.

Usually only certain data forms from the file are needed on a particular printout.

The question deals with the years from 1930 to 1937, so you'll want to select just the forms for those years for the printout. This means your Retrieve Spec will be:

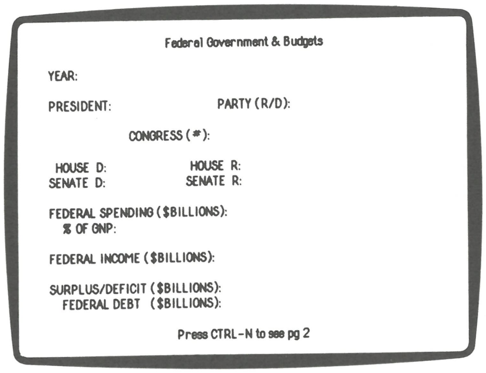
YEAR: *=1930 ..1937*

On your planning worksheet, find the place where it asks, "Which forms will be selected for printing?" Write the Retrieve Spec in the blank beside that question.

Deciding Which Data Items to Include in the Printout

Look at the *Fedspend* form in Figure 2 on page 24 and decide which of the data items would be useful in answering the question. The YEAR is needed, of course, and so is FEDERAL INCOME. When you define information requirements, you should include only those data items that are really needed. For this problem, for example, YEAR and FEDERAL INCOME are the only data items you need.

On your worksheet, write YEAR and FEDERAL INCOME in the blanks where it asks, "What data items will be included on the printout?"



```
              Federal Government & Budgets

YEAR:

PRESIDENT:                      PARTY (R/D):

            CONGRESS (#):

HOUSE  D:               HOUSE  R:
SENATE  D:              SENATE  R:

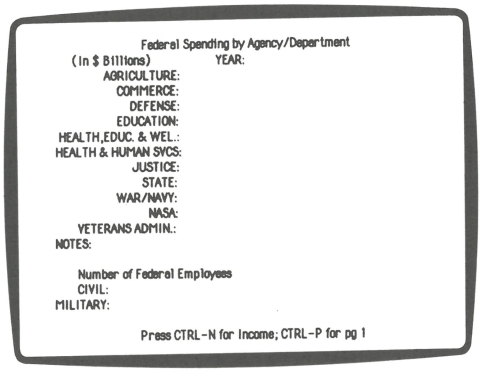
FEDERAL SPENDING ($BILLIONS):
  % OF GNP:

FEDERAL INCOME ($BILLIONS):

SURPLUS/DEFICIT ($BILLIONS):
  FEDERAL DEBT  ($BILLIONS):

                  Press CTRL-N to see pg 2
```

Page 1

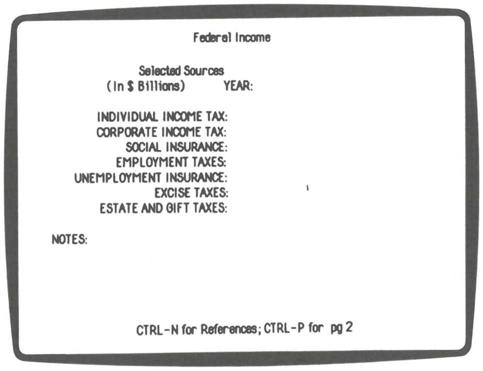


```
               Federal Spending by Agency/Department
   (In $ Billions)                   YEAR:
               AGRICULTURE:
                  COMMERCE:
                   DEFENSE:
                 EDUCATION:
       HEALTH,EDUC. & WEL.:
      HEALTH & HUMAN SVCS:
                   JUSTICE:
                     STATE:
                  WAR/NAVY:
                      NASA:
           VETERANS ADMIN.:
NOTES:

    Number of Federal Employees
    CIVIL:
MILITARY:

               Press CTRL-N for Income; CTRL-P for pg 1
```

Page 2



```
                       Federal Income

                     Selected Sources
                (In $ Billions)         YEAR:

           INDIVIDUAL INCOME TAX:
           CORPORATE INCOME TAX:
                SOCIAL INSURANCE:
                EMPLOYMENT TAXES:
        UNEMPLOYMENT INSURANCE:
                    EXCISE TAXES:
           ESTATE AND GIFT TAXES:

NOTES:

            CTRL-N for References; CTRL-P for  pg 2
```

Page 3

Figure 2

Listing Data in Order

In what order should the data be listed in the printout? There are a couple of possibilities. You could list the years in chronological order. That is, you could have the program sort the forms by YEAR. However, since the question asks you when federal income was the lowest, you might want to sort by FEDERAL INCOME. This will cause the program to list the years in order from lowest to highest federal income.

Choose which you will use for sorting—YEAR or FEDERAL INCOME. (Remember, there often isn't any single "right way" to retrieve information. Sometimes you have to try a couple of different ways before you find the most useful approach.)

On your planning worksheet, write the data item you'll use for sorting.

Naming the Pre-defined Print Spec

What name will you give to the Pre-defined Print Spec? It should be related to the data or problem. This example uses INCOME, but you can use any name you like. Remember that the name must be eight characters or less.

On your planning worksheet, write the name you'll use for your Pre-defined Print Spec.

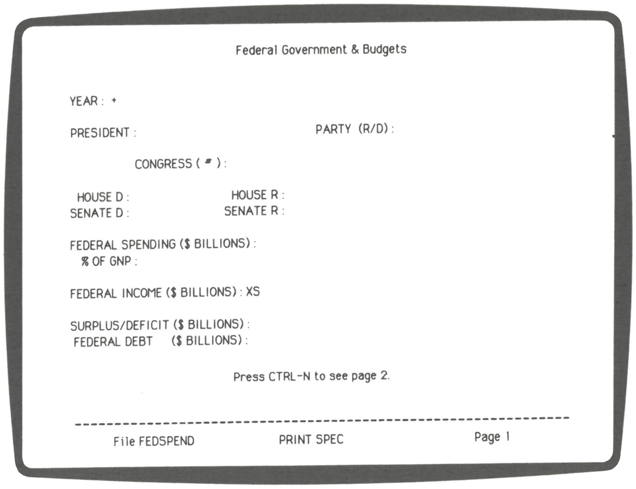
Setting Up a Pre-defined Print Spec

Now that you have planned your printout, you can set up the Pre-defined Print Spec. The Print Spec will tell the *File* program which data items you want printed and in what order.

First start up the *File* program in the usual manner. If you don't remember how to do this, see Activity 1 or the Quick Guide.

The PFS: File Function Menu is on your screen and the *Fedspend* data disk is in Drive 1.

1. Select the PRINT function by typing *5*. Press **TAB**.
2. Type the FILE NAME: *Fedspend*. Press **CTRL-C**. The Print Menu will appear.
3. Select DEFINE Print Spec by typing *2*. Press **CTRL-C**. The Current Pre-defined Print Specs screen will appear.
4. Type your Print Spec name. This example uses INCOME.
5. Press **CTRL-C**. The Print Spec form appears on the screen.
6. Type a plus sign (+) beside YEAR on Page 1 of the blank Print Spec. The + tells the *File* program to print this data item, and to print the next data item on the same line.
7. Press **TAB** to move the cursor to FEDERAL INCOME.
8. Type *X*. This tells the program to print this data item on its own. Then type *S*. (S stands for "sort.")
9. Your Print Spec should look like Figure 3, below.
10. When you have completed the Print Spec, press **CTRL-C** to store it on the disk.



```
                    Federal Government & Budgets

YEAR : +

PRESIDENT :                          PARTY (R/D) :

            CONGRESS ( # ) :

 HOUSE D :               HOUSE R :
SENATE D :              SENATE R :

FEDERAL SPENDING ($ BILLIONS) :
  % OF GNP :

FEDERAL INCOME ($ BILLIONS) : XS

SURPLUS/DEFICIT ($ BILLIONS) :
 FEDERAL DEBT    ($ BILLIONS) :

                    Press CTRL-N to see page 2.

--------------------------------------------------------------
     File FEDSPEND           PRINT SPEC              Page 1
```

Figure 3

Printing the Data

Now you can use your Pre-defined Print Spec to print out your data. Make sure that your printer is connected to your computer, the printer is turned on, and the paper is aligned in the printer. The PFS: File Function Menu should be on your screen.

Setting Up the Retrieve Spec

1. Type *5*, and then press **CTRL-C**. The Print Menu will appear.

2. Choose the Print Forms option by typing *1*. Press **CTRL-C**. The blank Retrieve Spec will appear. The program asks, "Which forms do you want to select for printing?" Refer to your notes. What Retrieve Spec were you going to use?

3. Beside YEAR, type *=1930 ..1937.*

4. Press **CTRL-C**. The Print Options Menu will appear.

Filling In the Print Options

Fill in the Print Options as shown below. Use **TAB** to get from one option to another.

PRE-DEFINED PRINT SPEC: *INCOME* (or whatever you've chosen)
PRINT ITEM NAMES: *N*
ADD LINEFEED CHARACTERS (Y/N): *Y*
LINES PER PAGE: *3*
NUMBER OF COPIES: *1*

Now press **CTRL-C**. The *File* program begins searching the file for the forms you have requested, and begins sorting the forms. Then the printing begins.

If the printer does not print your data, make sure that it is turned on and connected to your computer.

Interpreting the Printout

Your printout provides information about federal income from 1930 to 1937. You have in your printout "raw data," or numbers and figures that have little meaning until you "make sense" of, or interpret, the information. The data only have meaning in relation to some question or hypothesis.

Go back to the original question you wrote on your planning worksheet. The question asked at what point during this period federal income was lowest.

The first thing to do is decide which information on the printout is most useful in answering this question.

If you sort the data by YEAR, you can read the years one by one until you come to the year when income was the lowest.

If you sort the data by income, the first data item on your list will be the lowest income for the years printed.

If "depression" results in lower federal income, in which year was the depression the deepest?

In which year would you say the Great Depression started?

If you sorted your printout by YEAR, look at someone else's printout that was sorted by income. Which way of sorting do you think is most useful for answering the questions about the Depression?

Finishing Up

To finish the session, get the PFS: File Function Menu on your screen. Remove the *Fedspend* data disk from the disk drive and put it back in its protective jacket. Turn off the computer unless someone is waiting to use it. Put the disks wherever your teacher tells you to keep them.

ACTIVITY 5: PLANNING YOUR OWN PRINTOUTS

The last activity showed you step-by-step procedures for determining information requirements and preparing a printout of data. This lesson teaches you to plan your own printouts.

What You'll Do

You will work with your partner to define the information you need in order to answer questions. You'll use a worksheet for planning printouts. Next, you'll set up a Pre-defined Print Spec and print out your data. Then you'll analyze the printout, and decide whether you need more information in order to answer the question.

What You'll Need

- A worksheet for planning printouts (see page 29)
- An Apple *II*e or IIc computer
- A *File* program disk
- A *Fedspend* data disk
- A printer

WORKSHEET FOR PLANNING PRINTOUTS

Use this worksheet to plan printouts of data from a *PFS* file. After you answer the questions on this worksheet, take it to the computer and refer to it as you set up the Pre-defined Print Spec and then print the data.

Project or Student Name: ______________________

Name of File: ______________________

Defining Information Needs

What is the question or problem? ______________________

____

____

What data items will be included on the printout? ______________________

____

____

____

Which data item will be used for sorting the printout? ______________________

Setting Up a Pre-defined Print Spec

What will you name the Pre-defined Print Spec (1–8 characters)? ______________________

Printing the Data

1. Set up the Retrieve Spec. Which forms will be selected for printing? ______________________

____

2. Set up the Print Options. Will you print the item names (Y or N)? ______________________

Do you need to add linefeed characters for your printer (Y or N)? ______________________

How many lines do you need to print from each form page? ______________________
Use this number in the Lines Per Page option.

Defining Your Information Needs

The following questions relate again to the years of the Great Depression.

Question: Examine the changes in individual income tax during the years 1927–1941. In which of these years was the individual income tax the lowest? The highest?

Question: Examine the pattern of federal deficits between 1927 and 1941. In which year were the deficits the lowest? The highest?

Plan what information you need in order to answer these two questions. First of all, will you get the information in one printout or will you need two separate printouts? Why?

(Remember that there isn't always one "right answer" to questions such as "one printout or two?" Some methods may be easier for you, or may give you more useful data. Sometimes you have to try out more than one method before you find the printout that gives you just what you need.)

On your planning worksheet, write down the questions you're going to try to answer.

Deciding Which Forms to Print

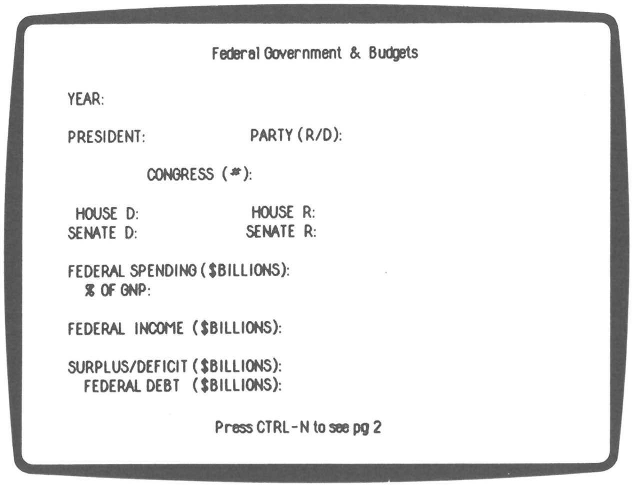
Decide on a Retrieve Spec that will tell the *File* program which forms you want to include in your printout.

Write the Retrieve Spec on your planning worksheet. If you're going to make two separate printouts, will you use the same Retrieve Spec for both?

Selecting Data Items to Print

What data items are needed to answer each of your questions? Refer as needed to the *Fedspend* form in Figure 4 on page 31 to remember what the data item names are.

On your planning worksheet, list the data items to be included in the printouts.



```
                    Federal Government & Budgets

YEAR:

PRESIDENT:                  PARTY (R/D):

          CONGRESS (#):

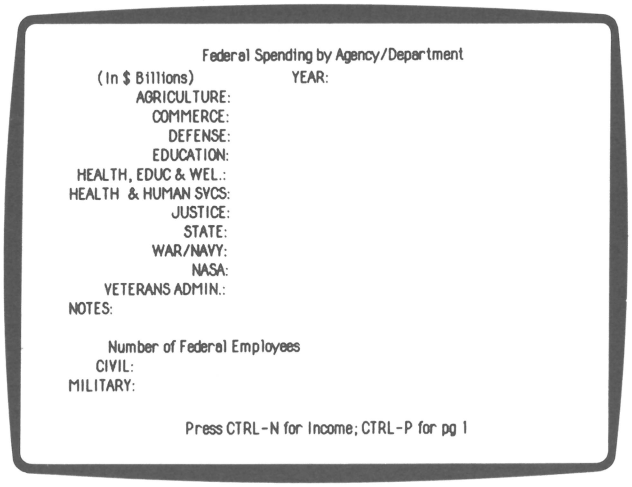
 HOUSE D:                   HOUSE R:
SENATE D:                   SENATE R:

FEDERAL SPENDING ($BILLIONS):
  % OF GNP:

FEDERAL INCOME ($BILLIONS):

SURPLUS/DEFICIT ($BILLIONS):
  FEDERAL DEBT ($BILLIONS):

                    Press CTRL-N to see pg 2
```

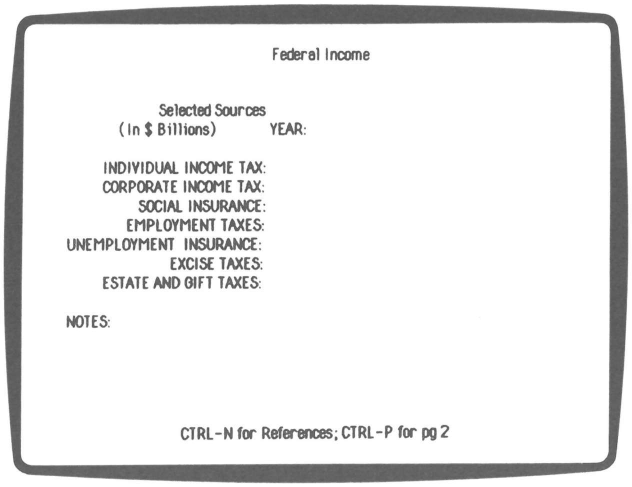


```
                  Federal Spending by Agency/Department
    (In $ Billions)             YEAR:
              AGRICULTURE:
                 COMMERCE:
                  DEFENSE:
                EDUCATION:
  HEALTH, EDUC & WEL.:
HEALTH & HUMAN SVCS:
                  JUSTICE:
                    STATE:
                 WAR/NAVY:
                     NASA:
         VETERANS ADMIN.:
NOTES:

      Number of Federal Employees
    CIVIL:
MILITARY:

              Press CTRL-N for Income; CTRL-P for pg 1
```

Page 2



```
                        Federal Income

              Selected Sources
          (In $ Billions)         YEAR:

     INDIVIDUAL INCOME TAX:
     CORPORATE INCOME TAX:
          SOCIAL INSURANCE:
        EMPLOYMENT TAXES:
UNEMPLOYMENT INSURANCE:
              EXCISE TAXES:
     ESTATE AND GIFT TAXES:

NOTES:


              CTRL-N for References; CTRL-P for pg 2
```

Page 3 Figure 4

Listing the Data in Order

On your planning worksheet, write which data item will be used for sorting the printout.

Naming Your Pre-defined Print Spec

The name you use must be eight characters or less, and should have some meaning to you.

On your planning worksheet, write your Pre-defined Print Spec name.

Setting Up a Pre-defined Print spec

Now that you and your partner have a clear plan for how to proceed, you're ready to prepare the printout of the data. If you're going to make separate printouts for the two questions, set up two Pre-defined Print Specs.

Start up the *File* program and use the Define Print Spec option of the PRINT function to define your Print Spec.

Refer to the notes on your planning worksheet, regarding the data items you want printed and the data item to use for sorting. Type the codes (*X*, +, and *S*) in the Print Spec form.

Printing the Data

Use the Print Forms option of the PRINT function to make the printouts you have planned. Do they look the way you wanted them to? If not, go back and change your Pre-defined Print Spec so that you will get the data you need in order to answer the questions.

Interpreting the Data

Does your printout give you the information you need in order to answer the original questions? What additional information do you need? Can you get it from the *Fedspend* file, or do you need to go to some other reference source?

Finishing Up

When you have finished working on the computer, finish up in your usual manner, putting the disks where they belong. You may want to put your printout on the wall where classmates can see the results of your work and learn from it.

ACTIVITY 6: ANALYZING RESULTS AND GETTING MORE DATA

You now have printouts showing the patterns of change in federal income, individual income taxes, and federal debt for the years 1927–1941. In this activity, you'll analyze these data and look for more information to support your hypotheses about the Great Depression.

What You'll Do

You will examine and interpret the data you've printed out from the file. Then, you'll go back to the *Fedspend* file to find more data to support your interpretations.

What You'll Need

- The printouts you made for the years 1927–1941
- An Apple *II*e or IIc computer
- A *File* program disk
- A *Fedspend* data disk

Interpreting the Data

Assuming that lower federal income, higher federal debt, and lower individual income tax collected are all indicators of a depressed economy, in which years was the Depression at its deepest?

What years showed signs of economic recovery? What signs or indications do you have of this? In what year did the federal income climb back up to its pre-Depression level? Did the federal debt ever get paid off?

Sometimes drawing a graph of the data can help you to see relationships and trends more clearly. For example, you could draw a bar graph to show the figures for federal income, individual income taxes, and federal debt for each year from 1927 through 1941. A graph gives you a picture of the data and helps you to interpret it.

Developing Further Hypotheses

If in an economic depression many people are unemployed, then you would expect to find other signs of the economy changing also.

- What other data items in the *Fedspend* file might help in getting a picture of the economic trends during the Great Depression?
- What pattern would you expect to see, for example, in federal income from corporate income taxes during the years 1927–1941? What about during the recovery years?
- Would you expect the amount spent on health, education, and welfare to increase or decrease as the Depression gets deeper?
- What would you predict would happen to the federal surplus/deficit as the Depression gets deeper?

Testing Your Hypotheses

Choose one or two of the economic signs suggested above. Test your hypothesis about those indicators by retrieving the data for the years 1927–1941. You can either display the forms on the screen and take notes, or you can get a printout.

Do the data support your hypotheses? Why or why not? Discuss these questions with your classmates and teachers.

Finishing Up

Share your findings with your classmates. Did they discover any economic indicators that you didn't think of? What patterns did they find?

When you're finished using the *Fedspend* file, close the session on the computer in the usual manner and put the disks where they belong.

ACTIVITY 7: PLANNING REPORTS

The printouts you made of data from the depression years provide useful information for that study. If you have the *PFS: Report* program, you can get printouts that are even more useful and easier to read. The *Report* program is especially useful when working with files like *Fedspend* that have a lot of statistical information in them, because *Report* will also do computations.

What You'll Do

As before, you'll first consider a sample problem and define your information needs. You will use a worksheet for planning reports. Then you will learn how to use the *Report* program to get information from the *Fedspend* file. Finally, you will interpret the data from the report.

What You'll Need

- A worksheet for planning reports (see page 36)
- An Apple *II*e or IIc computer
- A printer
- A *Fedspend* data disk
- A *Report* program disk
- A *Sortwork* disk

WORKSHEET FOR PLANNING REPORTS

Use this worksheet to plan a report from a *PFS* file using *PFS: Report*. After you answer the questions on this worksheet, take it to the computer and refer to it as you Pre-define a Report, set new headings, and then print the report.

Project or Student Name: ______________________

Name of File: ______________________

Defining Information Needs

What is the question or problem? ______________________

____

What data item will be used to sort the report? ______________________
(This data item will be in Column 1.)

What data item will go in each column? (For a Derived Column, write the formula.)

Column 1 ______________

Column 2 ______________

Column 3 ______________

Column 4 ______________

Column 5 ______________

Column 6 ______________

Pre-defining a Report

What will you name the Pre-defined Report (1–8 characters)? ______________

Setting New Headings

List the new headings you will set for the columns.

Data Item Name	**New Heading**

Printing the Report

1. Set up the Retrieve Spec. Which forms will be selected for reporting? ______________

____

2. Set up the Report Options. What title do you want printed at the top of each page of the report? ______________________

Do you need to add linefeed characters for your printer (Y or N)? ______________

Planning the Report

In planning a report, you begin by carefully considering the question or problem you want to solve. If you don't understand the problem, you won't be able to decide what data to put in the report.

Considering the Problem

Think about this sample problem:

> Problem: During much of the past fifty years, the federal government has spent more money than it took in income. Under which Presidents' administrations did the federal government manage to have a surplus, break even, or have just a small deficit? Did any President manage to reduce the size of the deficit or of the federal debt while he was in office?

The *Report* program is useful for making such analyses, because it will list the data items side-by-side in neat columns on the page.

Study the problem carefully. Do you understand the meaning of all the terms used in the problem statement? Three important terms used are deficit, surplus, and federal debt. If you're unsure of the meaning of these terms, look them up in your textbook or a dictionary, or ask your teacher.

Write down the problem on your worksheet for planning reports. If you can, write the problem in your own words rather than exactly the way it's stated above. For example, one student wrote on her worksheet, "List surplus/deficit and President side-by-side for each year." Another student wrote a question, "Which Presidents had a surplus or low deficit?" Another wrote, "List surplus/deficit in order of size. Show President and political party."

Defining Information Needs

What information is needed in order to answer the questions? The question is about the relative size of the federal surplus or deficit, so the first data item needed is SURPLUS/DEFICIT. The problem also asks you to look at who was President and what his political party was. Another question was whether any President managed to reduce the size of the federal debt.

There are many different ways to design a report that will help in analyzing this set of questions. In this example, the following data items are used:

SURPLUS/DEFICIT
PRESIDENT
PARTY
YEAR
PUBLIC DEBT

In planning a report, it's useful to make a hand sketch of the columns you want. Figure 5 on page 38 shows a sketch of the report for this problem.

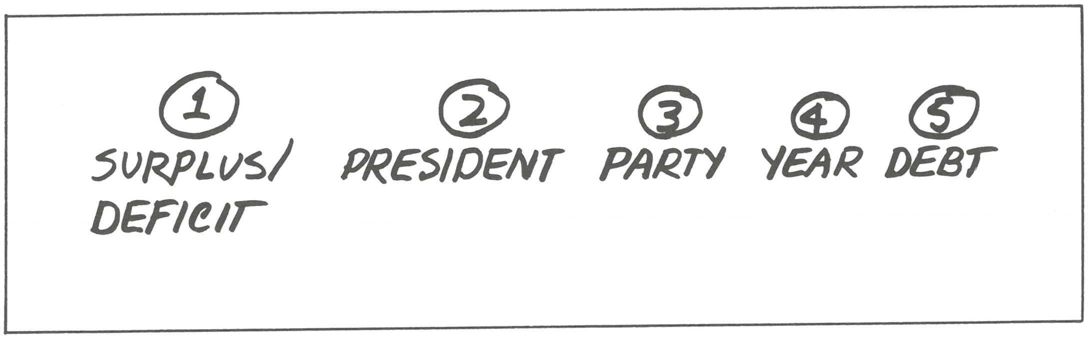


Figure 5

Deciding Which Data Goes in Column 1

The *Report* program puts the data in order based on which data item is in Column 1. Since you're looking at the relative size of the surplus/deficit, it will be useful to have the report sorted by SURPLUS/DEFICIT. So SURPLUS/DEFICIT goes in Column 1.

On your planning worksheet, write the data item that will be used for sorting.

Choosing Column Numbers for the Other Data Items

In this case, it probably doesn't matter which columns the other data items go in. You can decide.

On your planning worksheet, list the data items that will go in each column of the report.

Naming the Pre-defined Report

You'll need a name for the Pre-defined Report. It must be eight characters or less. This example will use DEFICIT.

Write the name of your Pre-defined Report on your planning worksheet.

Choosing Headings for the Columns

The *Report* program uses the data item names from the form as the column headings on the report. But often the data item names in the file are too long to fit as column headings. When you are deciding on headings for your columns, you need to think about how much space each heading will take across the page. For example, the data item SURPLUS/DEFICIT ($BILLIONS) would make a heading 27 characters long. That's too long for a heading. Shorten it to something like Surp/Def.

On your planning worksheet, list the new headings you will set for your columns. The following are recommended:

Data Item Name	**New Heading**
YEAR	Year
PRESIDENT	President
PARTY (R/D)	R/D
SURPLUS/DEFICIT ($BILLIONS)	Sur/Def
PUBLIC DEBT ($BILLIONS)	Debt

Deciding on a Retrieve Spec

Which of the forms in the file will be selected for the report? Since you're looking at all the years, the Retrieve Spec will be left blank.

Write the Retrieve Spec ("leave blank") on your planning sheet (Question 1 under Printing the Report).

Choosing a Title for the Report

Decide on a title for the report. The program will print the title at the top of each page of the report (32 characters or less).

This example will use "Presidents and Budget Deficits" as the title.

Write on your planning worksheet the title you will use for your report.

Completing the Planning Worksheet

There is one more detail you need to plan before your worksheet is complete. Do you know whether your printer needs to have a linefeed character sent to it by the program? If you're not sure, say "yes." If you find that your reports have too many spaces between lines, you know you do not need the linefeed.

Your plan is now complete. If you don't have time to finish this activity today, this is a good breaking point.

Setting Up the Report on the Computer

Now that you have planned your report, you're ready to prepare the report on the computer. Take your planning worksheet to the computer with you.

Start up the *Report* program:

1. Place the *Report* program disk in Drive 1.
2. If the computer is turned off, turn it on. Turn on the monitor. If the computer is already on, press these three keys all at once: **CTRL**, **OPEN APPLE**, and **RESET**.
3. When the PFS: Report Menu appears on the screen, remove the *Report* program disk from the disk drive.
4. Insert the *Fedspend* data disk in Drive 1.
5. Insert the *Sortwork* disk in Drive 2.

Pre-defining a Report

The PFS: Report Menu is on your screen.

1. Type *2* to select Pre-define a Report. Press **TAB**.
2. Type the file name *Fedspend.* Press **CTRL-C**. The Pre-defined Report screen will appear.
3. Type your report name: *DEFICIT*, or whatever name you chose. Press **CTRL-C**. The blank report form will appear.
4. On the report form, type *4* next to the YEAR data item. This will cause the *Report* program to put the YEAR in Column 4 of the report.
5. Press **TAB** to move the cursor to PRESIDENT.
6. Type *2*, or whichever column you want President to appear in.
7. Press **TAB** to move the cursor to PARTY.
8. Type *3*, or whichever column you want PARTY to appear in.
9. Press **TAB** to move the cursor to SURPLUS/DEFICIT.
10. Type *1N.* This tells the program to put SURPLUS/DEFICIT in Column 1 and treat it as numeric data. The *Report* program sorts numeric data from highest to lowest, and lines up the decimal points.
11. Press **TAB** to move the cursor to PUBLIC DEBT.
12. Type *5*, or whichever column you had planned for this data item.
13. Press **CTRL-C** to store the Report Spec. The PFS: Report Menu will appear.

Setting New Column Headings for the Report

Now you set new headings for the columns.

The PFS: Report Menu is on the screen.

1. Type *3* to select Set New Headings. Press **CTRL-C**. The Headings blank form appears.
2. Beside YEAR, type *Year.*
3. Beside PARTY, type *R/D.*
4. Beside SURPLUS/DEFICIT, type *Surp/Def.*
5. Beside FEDERAL DEBT, type *Debt.*
6. Press **CTRL-C** to store the new headings. The PFS: Report Menu will appear on the screen.

Printing the Report

You are now ready to print the report. Make sure the printer is turned on and the paper is aligned in the printer.

The PFS: Report Menu is on your screen.

1. Type *1* to select Print a Report. The blank Retrieve Spec form will appear.
2. Leave the Retrieve Spec blank. Press **CTRL-C**. The Report Options screen will appear.
3. Refer to your planning worksheet to see what title you planned for your report. Type the title of your report. Press **TAB**.
4. Type your Pre-defined Report Name. This example uses DEFICIT, but you should use the name you wrote on your planning worksheet.
5. If your printer requires a linefeed, press **TAB** to move the cursor to the Add Linefeed Characters option, and type *Y*. Press **CTRL-C**.

The *Report* program begins selecting the forms for printing. When the printout is complete, finish the session on the computer in the usual manner. Put the disks where they belong. Your report should look like Figure 6, below and on the next page.

```
                     Presidents and Budget Deficits

SURP/DEF   PRESIDENT           R/D        YEAR          DEBT
  19.4     F.D. Roosevelt       D         1942         0072.4
   8.9     Harry Truman         D         1948         0252.0
   7.6     Harry Truman         D         1951         0255.2
   6.6     Harry Truman         D         1947         0258.2
   4.1     D. Eisenhower        R         1956         0272.7
   3.2     D. Eisenhower        R         1957         0270.5
   3.2     Richard Nixon        R         1969         0367.1
   1.2     Calvin Coolidge      R         1927         0018.5
   1.0     Calvin Coolidge      R         1924         0021.2
   1.0     Harry Truman         D         1949         0252.7
   0.9     Calvin Coolidge      R         1926         0019.6
   0.9     Calvin Coolidge      R         1928         0017.6
   0.7     Calvin Coolidge      R         1925         0020.5
   0.7     Calvin Coolidge      R         1923         0022.3
   0.7     Herbert Hoover       R         1930         0016.2
   0.7     Herbert Hoover       R         1929         0016.9
   0.7     Warren Harding       R         1922         0023.0
   0.5     Warren Harding       R         1921         0024.0
   0.3     D. Eisenhower        R         1960         0284.1
   0.2     Woodrow Wilson       D         1920         0024.2
   0.0     Harry Truman         D         1952         0259.1
  -0.4     Herbert Hoover       R         1931         0016.8
  -1.2     D. Eisenhower        R         1954         0271.2
  -1.2     F.D. Roosevelt       D         1938         0037.2
  -1.6     Lyndon Johnson       D         1965         0313.8
  -2.2     Harry Truman         D         1950         0256.1
  -2.6     F.D. Roosevelt       D         1933         0022.5
  -2.7     F.D. Roosevelt       D         1937         0036.4

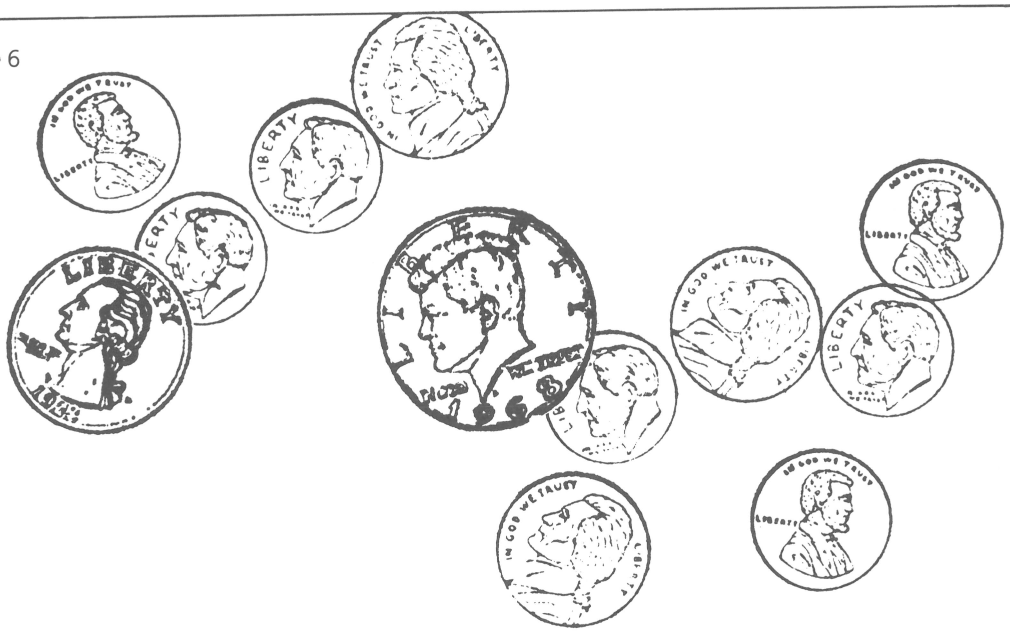
                                              (Continued on next page.)
```

Figure 6

Presidents and Budget Deficits

SURP/DEF	PRESIDENT	R/D	YEAR	DEBT
-2.7	F.D. Roosevelt	D	1940	0043.0
-2.8	F.D. Roosevelt	D	1935	0028.7
-2.8	Herbert Hoover	R	1932	0019.5
-2.8	Richard Nixon	R	1970	0370.1
-2.9	D. Eisenhower	R	1958	0276.8
-3.0	D. Eisenhower	R	1955	0272.8
-3.4	John Kennedy	D	1961	0288.9
-3.6	F.D. Roosevelt	D	1934	0027.1
-3.8	F.D. Roosevelt	D	1939	0040.4
-3.8	Lyndon Johnson	D	1966	0329.5
-4.4	F.D. Roosevelt	D	1936	0033.8
-4.7	Richard Nixon	R	1974	0474.2
-4.8	F.D. Roosevelt	D	1941	0048.9
-4.8	John Kennedy	D	1963	0305.8
-5.3	D. Eisenhower	R	1953	0266.0
-5.9	Lyndon Johnson	D	1964	0311.7
-7.1	John Kennedy	D	1962	0298.2
-8.7	Lyndon Johnson	D	1967	0341.3
-12.9	D. Eisenhower	R	1959	0284.7
-14.8	Richard Nixon	R	1973	0457.3
-18.2	Harry Truman	D	1946	0296.4
-23.0	Richard Nixon	R	1971	0397.3
-23.4	Richard Nixon	R	1972	0426.4
-25.2	Lyndon Johnson	D	1968	0369.8
-27.7	Jimmy Carter	D	1979	0826.5
-44.9	Jimmy Carter	D	1977	0698.8
-45.0	Harry Truman	D	1945	0258.7
-45.2	Gerald Ford	R	1975	0533.2
-46.1	F.D. Roosevelt	D	1944	0201.0
-48.8	Jimmy Carter	D	1978	0771.5
-53.8	F.D. Roosevelt	D	1943	0136.6
-57.9	Ronald Reagan	R	1981	0997.9
-59.6	Jimmy Carter	D	1980	0907.7
-66.4	Gerald Ford	R	1976	0620.4
-110.6	Ronald Reagan	R	1982	1142.0
-195.0	Ronald Reagan	R	1983	1381.0
	Ronald Reagan	R	1984	

Figure 6



Analyzing the Report

Go back to the original problem statement. It asks you to look at the surplus/deficit. First, look at the surplus figures at the beginning of Column 1. Then look at the Presidents and their parties. Notice that both Republican and Democratic Presidents have had budget surplus years. When was the last year that the federal government had a surplus? Who was president in that year? Now look down the Year column to find out what Nixon's budget situation was in the year prior to that surplus. Notice that in 1968 there was a budget deficit of 25 billion dollars.

Look at the surplus in Harry Truman's administration in 1947. Then look down the Year column to find out what the budget situation was in 1946 when Truman took office. There was an 18 billion dollar deficit in 1946. What factors might account for the federal government's ability to go from an 18 billion dollar deficit in 1946 to a 6 billion dollar surplus in 1947? Some things to consider would be the effect of the end of World War II on the economy, and the general state of the economy in the late 1940s.

Look at the bottom of Column 1 where the largest deficits are shown. Examine the data more closely. What additional analyses might be useful? For example, it might be helpful to have another list of the same data, but in order by year. In that way you could more easily see the changes in the budget deficit within a particular President's administration.

On Your Own

If you have time, prepare another report of the same data items, this time with Year in Column 1, President in Column 2, and Surplus/Deficit in Column 3. This time, also make a column for % OF GNP. Then analyze the data to see in which Presidents' administrations the government came closer to balancing the federal budget and in which administrations the deficits got worse. Try to account for these changes by relating them to other facts you know about the economy in wartime. For example, look at the dramatic change in the size of the deficit between 1974 and 1975. Do you think the energy crisis may be related to this? How could you find out?

Finishing Up

Save your worksheet for planning reports. It may help you in the next activity.

ACTIVITY 8: PLANNING REPORTS WITH COMPUTATIONS

The *Report* program is especially useful when working with files like *Fedspend* that have a lot of statistical information in them, because *Report* will also do computations.

What You'll Do

As before, you'll first consider a sample problem and define your information needs. Then you'll learn how to use the *Report* program to do needed calculations on data from the *Fedspend* file. Finally, you'll interpret the data in the report.

What You'll Need

- A worksheet for planning reports (see page 45)
- An Apple *IIe* or IIc computer
- A printer
- A *Fedspend* data disk
- A *Report* program disk
- A *Sortwork* disk

WORKSHEET FOR PLANNING REPORTS

Use this worksheet to plan a report from a *PFS* file using *PFS: Report*. After you answer the questions on this worksheet, take it to the computer and refer to it as you Pre-define a Report, set new headings, and then print the report.

Project or Student Name: ____________________

Name of File: ____________________

Defining Information Needs

What is the question or problem? ____________________

____

What data item will be used to sort the report? ____________________
(This data item will be in Column 1.)

What data item will go in each column? (For a Derived Column, write the formula.)

Column 1 ____________

Column 2 ____________

Column 3 ____________

Column 4 ____________

Column 5 ____________

Column 6 ____________

Pre-defining a Report

What will you name the Pre-defined Report (1–8 characters)? ____________

Setting New Headings

List the new headings you will set for the columns.

Data Item Name	**New Heading**

Printing the Report

1. Set up the Retrieve Spec. Which forms will be selected for reporting? ____________

   ____

2. Set up the Report Options. What title do you want printed at the top of each page of the report? ____________________

Do you need to add linefeed characters for your printer (Y or N)? ____________

Planning the Report

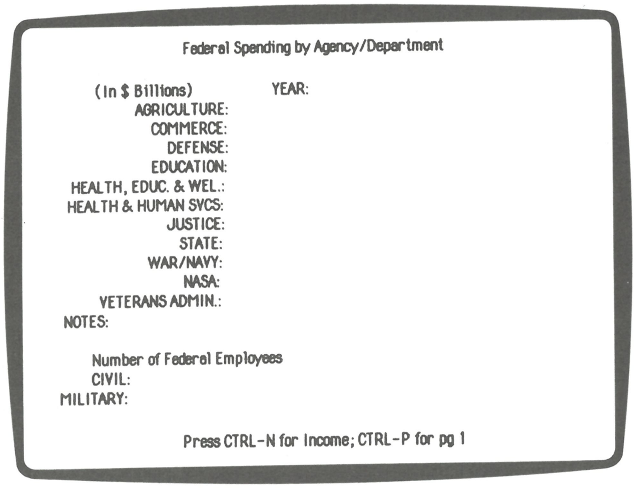
In planning a report, you begin by carefully considering the question or problem you want to solve. If you don't understand it, you won't be able to decide what data to put in the report.

Considering the Problem

The following is a sample problem you'll use in learning how to prepare reports using *Fedspend* and *Report*.

> Problem: A major issue today is whether the United States government should place greater emphasis on defense or social services. Examine the pattern of relative spending on these two areas over the past fifty years.

To understand this problem and the data needed to address it, you need to know how the data have been recorded for defense and social programs. Look at Figure 7, which shows Page 2 of the *Fedspend* form. Notice there are two data items relating to defense—DEFENSE, and WAR/NAVY. Figure 8 on pages 47 and 48 is a report that lists both these data items. Looking at this report, you can see why DEFENSE and WAR/NAVY are separate data items in the file—the Defense Department was not established until 1950.



```
                Federal Spending by Agency/Department

      (In $ Billions)          YEAR:
            AGRICULTURE:
               COMMERCE:
                DEFENSE:
              EDUCATION:
   HEALTH, EDUC. & WEL.:
  HEALTH & HUMAN SVCS:
                JUSTICE:
                  STATE:
               WAR/NAVY:
                   NASA:
        VETERANS ADMIN.:
NOTES:

     Number of Federal Employees
     CIVIL:
MILITARY:

              Press CTRL-N for Income; CTRL-P for pg 1
```

Figure 7

Spending — Defense

YEAR	DEFENSE	WAR/NAVY	NOTES
1930		000.827	
1931		000.840	
1932		000.833	
1933		000.784	
1934		000.705	
1935		000.924	
1936		001.147	
1937		001.184	
1938		001.240	
1939		001.368	
1940		001.798	*Education was a Department of the United States Government. It was not at the Cabinet level.
1941		006.252	
1942		022.905	
1943		063.414	
1944		075.975	
1945		080.537	
1946		043.147	
1947		014.769	
1948		011.983	
1949		013.980	*See War and Navy Department.
1950	013.734	*	*The War Department and Navy Department became the Department of Defense.
1951	021.916	*	*See Defense.
1952	042.071	*	*See Defense.
1953	050.363	*	*In 1953, Health, Education and Welfare was established as a Cabinet agency. *See Defense.
1954	046.904	*	*See Health, Education, and Welfare. **See Defense.
1955	040.626	*	*See Health, Education, and Welfare. **See Defense.
1956	040.641	*	*See Health, Education, and Welfare. **See Defense.
1957	043.270	*	*See Health, Education, and Welfare. **See Defense.
1958	044.142	**	*See Health, Education, and Welfare. **See Defense.
1959	044.380	**	*See Health, Education, and Welfare. **See Defense.
1960	045.691	**	*See Health, Education, and Welfare. **See Defense.

(Continued on next page.)

Figure 8

YEAR	DEFENSE	WAR/NAVY	NOTES
1961	047.494	**	*See HEW. **See Defense.
1962	051.462	**	*See HEW. **See Defense.
1963	053.429	***	*See HEW. This figure reflects the inclusion of Social Security. **See Defense.
1964	054.514	**	*See HEW. **See Defense.
1965	050.790	**	*See HEW. **See Defense.
1966	058.464	**	*See HEW. **See Defense.
1967	070.093	**	*See HEW. **See Defense.
1968	080.517	**	*See HEW. **See Defense.
1969	081.232	**	*See HEW. **See Defense.
1970	078.360	**	*See HEW. **See Defense.
1971	071.661	**	*See HEW. **See Defense.
1972	076.709	**	*See HEW. **See Defense.
1973	079.629	**	*See HEW. **See Defense.
1974	079.300	**	*See HEW. **See Defense.
1975	087.071	**	*See HEW. **See Defense.
1976	090.160	**	*See HEW. **See Defense.
1977	097.930	**	*See HEW. **See Defense.
1978	105.575	**	*See HEW. **See Defense.
1979	117.921	**	*HEW split into HHS and the Department of Education in 1979.
1980	136.067	**	*See Education, and Health and Human Services. **See Defense.
1981	161.923	**	*See Education, and Health and Human Services. **See Defense.
1982	185.821	**	*See Education, and Health and Human Services. **See Defense.
1983	211.861	**	*See Education, and Health and Human Services. **See Defense.
1984			

Figure 8

Similarly, there are three data items related to health, education, and social service. These are EDUCATION, HEALTH, EDUC & WEL., and HEALTH & HUMAN SVCS. Figure 9 on pages 49 and 50 lists these three data items, along with the NOTES data item. You can see from this report why the data are represented in this way in the *Fedspend* file. In what year was HEW (Department of Health, Education, and Welfare) established? In what year was HEW split into Education and HHS?

On your planning worksheet, write in your own words the question that is being asked in this exercise.

YEAR	ED.	HEW	HHS	NOTES
1930				
1931				
1932				
1933				
1934				
1935				
1936				
1937				
1938				
1939				
1940	000.043*			*Education was a Department of the United States Government. It was not at the cabinet level.
1941	000.041			
1942	000.188			
1943	000.198			
1944	000.197			
1945	000.234			
1946	000.110			
1947	000.097			
1948	000.171			
1949	000.165			*See War and Navy Department
1950	000.219			*The War Department and Navy Department became the Department of Defense.
1951	000.221			*See Defense.
1952	000.322			*See Defense.
1953	*	000.425	*	*In 1953, Health, Education, and Welfare was established as a Cabinet agency. **See Defense.
1954	*	001.981	*	*See Health, Education, and Welfare.

(Continued on next page.)

Figure 9

1955	*	001.993	*	*See Health, Education, and Welfare.
1956	*	002.071	*	*See Health, Education, and Welfare.
1957	*	002.295	*	*See Health, Education, and Welfare.
1958	*	002.645	*	*See Health, Education, and Welfare.
1959	*	046.491	*	*See Health, Education, and Welfare.
1960	*	003.403	*	*See Health, Education, and Welfare.
1961	*	003.681	*	*See Health, Education, and Welfare.
1962	*	004.210	*	*See HEW. **See Defense.
1963	*	020.249**	*	*See HEW. **This figure reflects the inclusion of Social Security. **See Defense.
1964	*	021.695	*	*See HEW. **See Defense.
1965	*	022.732	*	*See HEW. **See Defense.
1966	*	027.959	*	*See HEW. **See Defense.
1967	*	034.607	*	*See HEW. **See Defense.
1968	*	040.576	*	*See HEW. **See Defense.
1969	*	046.599	*	*See HEW. **See Defense.
1970	*	051.734	*	*See HEW. **See Defense.
1971	*	061.866	*	*See HEW. **See Defense.
1972	*	072.352	*	*See HEW. **See Defense.
1973	*	083.340	*	*See HEW. **See Defense.
1974	*	093.744	*	*See HEW. **See Defense.
1975	*	110.504	*	*See HEW. **See Defense.
1976	*	128.785	*	*See HEW. **See Defense.
1977	*	147.455	*	*See HEW. **See Defense.
1978	*	162.856	*	*See HEW. **See Defense.
1979	010.879	*	170.303	*HEW split into HHS and the Department of Education in 1979.
1980	013.112	*	194.703	*See Education, and Health and Human Services. **See Defense.
1981	014.322	*	227.606	*See Education, and Health and Human Services. **See Defense.
1982	015.500	*	251.267	*See Education, and Health and Human Services. **See Defense.
1983	016.071	*	274.448	*See Education, and Health and Human Services. **See Defense.
1984				

Figure 9

Defining Information Needs

First, you need to decide what information is needed for this problem, and whether the data you need is available in the *Fedspend* file.

The problem is to compare the spending for DEFENSE and WAR/NAVY versus spending on EDUCATION, HEALTH EDUCATION AND WELFARE, and HEALTH AND HUMAN SERVICES. You can find this out by subtracting the amount spent on DEFENSE and WAR/NAVY from the total amount spent on the EDUCATION, HEW, and HEALTH AND HUMAN SERVICES. When the results of that subtraction are positive, the amount spent on social programs exceeded (become greater than) the amount spent on defense.

In all, six data items are needed for this report. They include:

YEAR
DEFENSE
WAR/NAVY
EDUCATION
HEALTH, EDUC & WEL
HEALTH & HUMAN SVCS

Deciding On Columns for the Data Items

The *Report* program prints out data in columns. An important decision to make is what data item to put in what column. This is important because *Report* sorts the report according to the data in Column 1.

Since the problem asks you to compare spending in these two areas, it would be useful to be able to see the results of the subtraction in Column 1. Column 1, therefore, will be a *Derived Column*, the results of the subtraction.

Make a rough sketch of your report, showing the columns. Figure 10 gives an example.

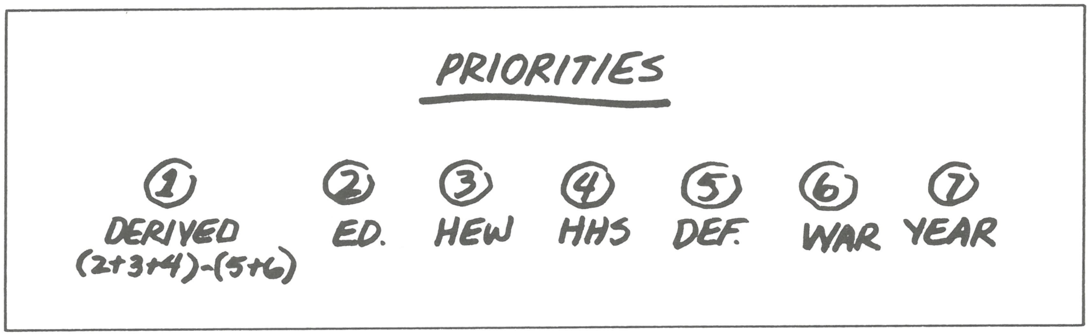


Figure 10

MADISON LIBRARY
MADISON JR. HIGH SCHOOL
500 S.E. MADISON BLVD.
BARTLESVILLE, OK 74006

Completing the Planning Worksheet

There are a few more planning details you need to complete. Fill in the rest of the worksheet for planning reports. Give a name to your Pre-defined Report. List the new headings you will set for the columns. Since there will be seven columns on this report, each column heading must be fairly short—five or six characters. Tell what Retrieve Spec you're going to use. Write a title for the report.

Setting up the Report on the Computer

When your planning worksheet is complete, it's time to set up the report on the computer.

Start up the *Report* program.

1. Load the *Report* program.
2. When the PFS: Report Menu appears on the screen, remove the *Report* program disk from the disk drive.
3. Insert the *Fedspend* data disk in Drive 1.
4. Insert the *Sortwork* disk in Drive 2.

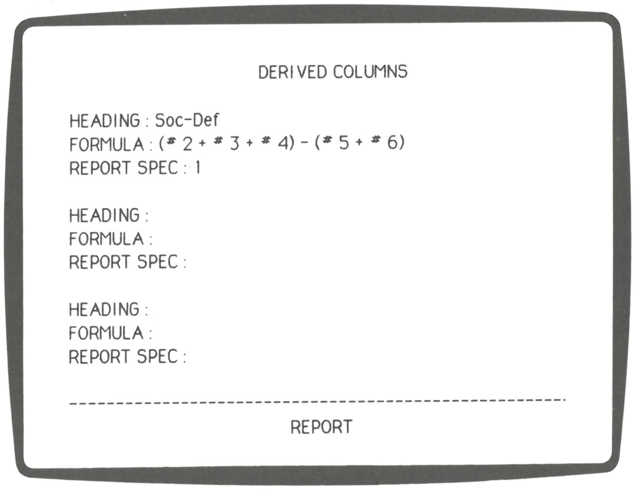
Pre-defining the Report

1. Select Option 2 from the PFS: Report Menu.
2. Type the file name: *Fedspend*. Press **CTRL-C**.
3. When the Report Name appears, type your report name. Then press **CTRL-C**. The blank report form will appear.
4. Press **CRTL-N** to see Page 2 of the Report Spec form.
5. Beside YEAR, type *7*. This tells the program to put the Year in Column 7 of the report.
6. Press **TAB** to move the cursor to DEFENSE. Type *5* to put Defense in Column 5.
7. Press **TAB** to move the cursor to WAR/NAVY. Type the column number.
8. Continue entering the column numbers you had planned for HEALTH, EDUC & WEL, HEALTH & HUMAN SVCS, and EDUCATION.
9. Press **CTRL-D** to get the Derived Columns screen.

Defining the Derived Column

You'll want the first column of the report to show the results of subtracting defense expenditures from social service expenditures. You want this in Column 1, because you want the data to be sorted in order of the results of the subtraction. Remember that the *Report* program automatically sorts by the first column.

1. Type *Soc-Def,* which will be the column heading. Press **TAB**.
2. Type *(#2+#3+#4)–(#5+#6).* This is the formula for calculating this column. Then press **TAB**.
3. For the Report Spec, type *1.* This tells the program to put this Derived Column in Column 1.
4. Your Derived Columns screen should look like Figure 11. Press **CTRL-C** to store the Report Spec. The PFS: Report Menu will appear.



```
                    DERIVED COLUMNS

HEADING : Soc-Def
FORMULA : (# 2 + # 3 + # 4) - (# 5 + # 6)
REPORT SPEC : 1

HEADING :
FORMULA :
REPORT SPEC :

HEADING :
FORMULA :
REPORT SPEC :

-----------------------------------------------------
                        REPORT
```

Figure 11

Setting New Column Headings for the Report

Look at your planning sheet to see what new headings you had planned for your columns. Then set new headings following this procedure:

The PFS: Report Menu is on your screen.

1. Type *3* to select Set New Headings. The blank Headings form will appear.
2. Press **CTRL-N** to see Page 2 of the form.
3. Beside YEAR, type *Year.*
4. Press **TAB** to move the cursor to each of the data items used in this report, and type an abbreviation to use for the column heading.
5. Press **CTRL-C** to store the new headings. The PFS: Report Menu will appear.

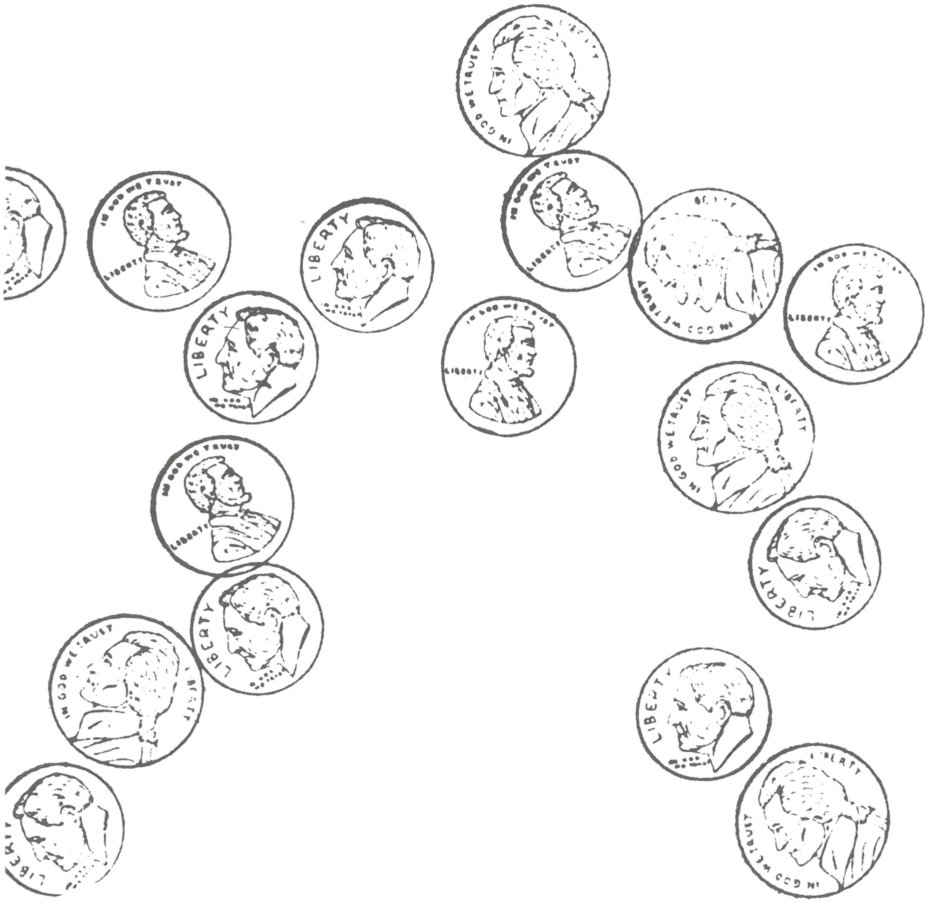
Printing the Report

Now you're ready to print the report. Make sure the printer is turned on and the paper is aligned in the printer.

1. With the PFS: Report Menu on the screen, type *1* to select Print a Report. Press **CTRL-C**. The blank Retrieve Spec form will appear.
2. Refer to your planning worksheet. Find the Retrieve Spec you planned to use for this report. Type the Retrieve Spec.
3. Press **CTRL-C**. The Report Options screen will appear.
4. Type the title of your report. Press **TAB**.
5. Type your Pre-defined Report Name.
6. If you need a linefeed for your printer, type *Y* to choose that option.
7. Press **CTRL-C**. The *Report* program will begin to select the forms for printing.

Debugging the Report

Does your report look the way you intended? It should look like Figure 12 on page 55.



Priorities

Soc-Def	ED.	HEW	HHS	DEF.	WAR	Year
80.95	15.500		251.267	185.821		1982
80.01	14.322		227.606	161.923		1981
78.66	16.071		274.448	211.861		1983
71.80	13.112		194.703	136.112		1980
63.26	10.879		170.303	117.921		1979
57.28		162.856		105.575		1978
49.53		147.455		97.930		1977
38.63		128.785		90.160		1976
25.34		112.411		87.071		1975
14.44		93.744		79.300		1974
3.71		83.340		79.629		1973
2.11		46.491		44.380		1959
-0.71					0.705	1934
-0.78					0.784	1933
-0.83					0.827	1930
-0.83					0.833	1932
-0.84					0.840	1931
-0.92					0.924	1935
-1.15					1.147	1936
-1.18					1.184	1937
-1.24					1.240	1938
-1.37					1.368	1939
-1.76	0.043				1.798	1940
-4.36		72.352		76.709		1972
-6.21	0.041				6.252	1941
-9.80		61.866		71.661		1971
-11.81	0..171				11.983	1948
-13.52	0.219			13.734		1950
-13.82	0.165				13.980	1949
-14.67	0.097				14.769	1947
-21.70	0.221			21.916		1951
-22.72	0.198				22.905	1942
-27.96		52.337		80.295		1970
-28.06		22.732		50.790		1965
-30.51		27.959		58.464		1966
-32.82		21.695		54.514		1964
-33.18		20.249		53.429		1963
-34.63		46.599		81.232		1969
-35.49		34.607		70.093		1967
-38.57		2.071		40.641		1956
-38.63		1.993		40.626		1955
-39.94		40.576		80.517		1968
-40.98		2.295		43.270		1957
-41.50		2.645		44.142		1958
-41.75	0.322			42.071		1952
-42.29		3.403		45.691		1960
-43.04	0.110				43.147	1946
-43.81		3.681		47.494		1961
-44.92		1.981		46.904		1954
-47.25		4.210		51.462		1962
-49.94		0.425		50.363		1953
-63.22	0.198				63.414	1943
-75.78	0.197				75.975	1944
-80.30	0.234				80.537	1945

Figure 12

If it doesn't, here are some tips on debugging.

- Check to see if the columns are in the correct order.

If your column headings aren't in the right order, go back to the procedure for Predefining the Report on page 52. Check over your Report Spec for the report, and make corrections as needed.

- Look at the Column 1 results of the calculation. Check the arithmetic. If Column 1 is not the correct result of subtracting all of the defense and war expenditures from all of the health, education, and social service expenditures, then you have set up the wrong formula for calculating the derived column. Go back to the procedure for defining the derived column, on page 53.

- Check to see whether all seven columns fit across the page. If they do not, you forgot to set new column headings for the report. Go back to the procedure for setting new column headings, on page 53.

Are some of your data incorrect? Does one of the values look wildly different from all the others? If so, your data file probably has an error in it. Bring this problem to your teacher's attention.

Interpreting the Report

Interpret the data on your report by answering the following questions:

- In what year was the largest amount more spent on defense than on social programs? Can you think of a reason for this?

- What has been the pattern in the 1980s? Is more being spent on defense or on social programs?

- In the 1960s there were many public debates concerning federal spending priorities. Some groups advocated greater spending on social programs, while others argued for more defense spending. Based on the data, which side appears to have been winning the debate?

Continuing the Research

Since the early 1970s there have been large increases in expenditures on social programs. Prepare a report that lists Education, HEW, HHS, and Defense expenditures in order by year beginning with 1970. Where could you get information that would help to explain the increases in all these categories since 1970? Some factors to explore might be inflation, oil prices, and changes in social legislation.

Finishing Up

When you have finished working on the computer, finish up in the usual manner, putting the disks where they belong.

ACTIVITY 9: GRAPHING DATA

A graph is often a very useful way to display the kinds of data you have in the *Fedspend* file. You can produce graphs of your data in either of two ways. You can print out selected data in the order needed, and then draw a graph by hand, or you can use the *PFS: Graph* program to draw a graph directly from the data in the *Fedspend* file.

The only difference between these two methods is that after you know how to use the *Graph* program, it is much quicker to have the computer draw the graph than it is to draw it by hand.

What You'll Do

In this activity, you'll learn how to prepare a graph using the *Graph* program. If you don't have the *Graph* program, you can create your own graph by hand.

What You'll Need

- An Apple *IIe* or IIc computer
- Two disk drives
- A printer that will print graphics
- A *Graph* program disk
- A *Fedspend* data disk

Considering the Problem

The following is a sample problem that you'll use to define information needs and demonstrate the graphing of data from a file:

Problem: Examine the relationship between the federal deficit and the public debt.

From earlier activities, you should recall that the federal deficit is calculated by subtracting the year's federal spending from the year's federal income. When the difference is negative, we have a deficit for that year. The public debt, on the other hand, is the total amount of money the federal government owes to its creditors. This is not an annual figure but rather a cumulative one.

In this activity you'll prepare a graph showing the federal deficit and federal debt for selected years, to see what, if any, relationship exists between these two factors.

Defining Information Needs

In planning your graph, you must decide what data items from the file you want to show, and how you want to show them.

Choosing Data Items for the Graph

The problem you're considering has to do with the relationship between federal surplus/deficit and the federal debt. The first thing you need to do is decide what data items in the *Fedspend* file can be useful to you in studying this problem.

You will need a chart showing the SURPLUS/DEFICIT over time (YEAR) and a chart showing PUBLIC DEBT over the same time period (YEAR).

Each of these two charts will be prepared separately, but the *Graph* program will combine them into one graph.

For the first chart, you will use the data items YEAR and SURPLUS/DEFICIT.

For the second chart, you will use the data items YEAR and PUBLIC DEBT.

Deciding on a Retrieve Spec

Which years should be shown on the graph? If you tried to show every year for which data exist in the file, the graph would be too cluttered to read and understand. In looking at a pattern over several decades, it's better to show on your graph just the data for every ten years or so.

The most recent year in the *Fedspend* file is 1983. You want to include the most recent data available. Therefore one way of selecting years to show on the graph would be to select all the years ending in 3. The Retrieve Spec therefore would be **..** *3* (dot dot 3).

Choosing X and Y Axis

Which data item should be the x-axis of the first chart? Which data item should be the y-axis of the chart?

If you want to see changes over time, it would be useful to have the YEARS on the x-axis.

You'll need to tell the *Graph* program that the x-axis data is to be numeric (N), so that *Graph* will sort the years in order from 1900 to 1980.

Getting Data from the File

Follow these steps to get the data from the *Fedspend* file into the *Graph* program.

1. Start up the *Graph* program. The PFS: Graph Menu will appear on your screen.
2. Insert the *Fedspend* data disk in Drive 2.
3. Type *1* to select GET/EDIT DATA. Press **CTRL-C**. The GET/EDIT DATA Menu will appear on the screen.
4. Type *3* to select GET PFS: FILE. Press **TAB**.
5. Select GRAPH: A. Press **CTRL-C**. A blank Retrieve Spec will appear on the screen.
6. Type your Retrieve Spec YEAR: *..3*. Press **CTRL-C**. A blank Graph Spec will appear on the screen.
7. Type the x-axis spec YEAR: *XN*. This tells the program that YEAR should be shown on the x-axis and that it is numeric data.
8. Press **TAB** to move the cursor to SURPLUS/DEFICIT.
9. Type *Y*. This tells the program that SURPLUS/DEFICIT should be shown on the y-axis. Press **CTRL-C**. The *Graph* program will begin reading the data from the file.
10. When the screen says "FORMS READ: n," you know the program has read the data successfully. Press **CTRL-C**.

Displaying and Debugging the Graph

Take a look at your graph by selecting *2* (Display Chart) from the PFS: Graph Menu.

It looks strange, doesn't it? All the data points are scrunched up in the 1900s on an x-axis that goes from zero to 2,000. Can you guess why?

You need to edit the data so that the data points will be spread out legibly on the graph.

Press **CTRL-C** to get back to the PFS: Graph Menu.

Editing the Data
Follow these steps to edit the data:

1. Type *1* to select GET/EDIT DATA. Press **CTRL-C**. The GET/EDIT/DATA Menu appears.
2. Select ENTER/EDIT DATA by typing *1*. Press **TAB**.
3. Select GRAPH: A. Press **CTRL-C**. The data will appear on the screen.
4. Using the arrow keys and the **SPACE BAR**, erase the 19 from all the x-axis data. When you're finished, the x-axis data should include 33, 43, 53, and so forth, to 83.
5. When you're finished editing the data, press **CTRL-C**. The screen will say "Reading Data." Then the PFS: Graph Menu will appear.

Display the Chart Again
From the Graph Menu, select DISPLAY CHART by typing *2*. Press **CTRL-C**. The graph will appear on the screen.

It looks much better now, doesn't it?

Press **CTRL-C** to get the PFS: Graph Menu.

Preparing the Federal Debt Chart
To see the relationship of the surplus/deficit to the federal debt, you now need to add Chart B to the graph. Chart B will show the federal debt. See if you can do this without a detailed procedure to follow. Use the same process as you used for Chart A, except that you will choose Chart B on the GET/EDIT DATA Menu.

Adding Titles to the Chart
Your graph, including both Chart A and Chart B, should now be ready. You will want to add titles to the chart, so that the x-axis and y-axis will be clear and understandable to anyone who reads the chart.

The PFS: Graph Menu is on your screen.

1. Select DEFINE CHART by pressing *3*. Press **CTRL-C**. The Define Chart Menu appears.
2. Press **TAB** to move the cursor to CHART TITLE, and type *Deficits and Debts*.
3. Press **TAB** to move the cursor to X-AXIS TITLE, and type *Years*.
4. Press **TAB** to move the cursor to Y-AXIS TITLE, and type *Billions of $*.
5. Press **CTRL-C** to store the titles. The PFS: Graph Menu will appear on the screen.

Displaying the Chart with Titles

Display the chart again. How does it look now? Is it neat and clear?

Adjusting the Y Axis

While the chart is being displayed on your screen, notice the data points for 1983. The public debt was around 1400 billion. But the y-axis scale goes up to 2000 billion. Similarly, the federal deficit in 1983 was around 200 billion, but the y-axis scale goes down to 1000 billion.

We can change the y-axis maximum and minimum so that we will see more detail on the chart. We can reduce the y-axis maximum to 1600 and the y-axis minimum to –400. Here's the procedure:

Press **CTRL-C** to get the PFS: Graph Menu on the screen.

1. Type *3* to select DEFINE CHART. Press **CTRL-C**.

2. Press **TAB** until the cursor is in the lower right, where it says Y MIN, and type *–400.*

3. Press **TAB** until the cursor is beside Y MAX and type *1600.*

4. Press **CTRL-C**. The PFS: Graph Menu will appear.

Display your chart again. This time, you can see the data points a little more clearly. Compare your chart to Figure 13 below. If they don't look the same, you still have some debugging to do. If the chart looks right, print it.

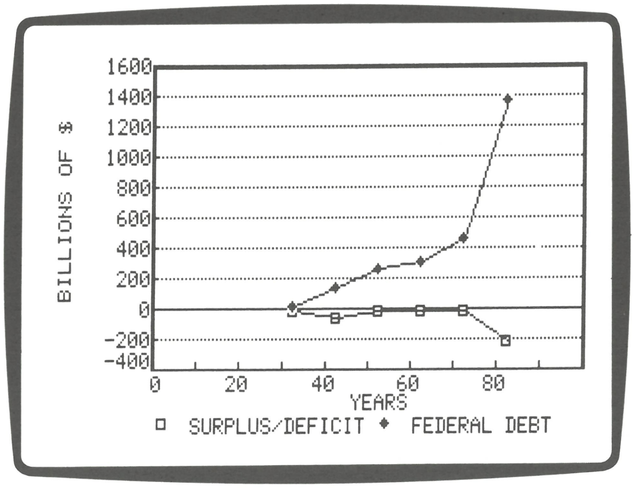


Figure 13

Printing the Chart

If your chart looks good, you can print it now. If you don't have the time or a printer to print it right away, use the chart in Figure 13 to do your interpretation of the data.

1. From the Graph Menu, select PRINT/PLOT by typing *6*. Press **CTRL-C**. The PRINT/PLOT Menu will appear.
2. From the PRINT/PLOT Menu, type *1* if you have a printer and *2* if you have a plotter. Then press **CTRL-C**. The PRINT Menu appears on the screen. If you don't know what kind of printer you have, you can just keep trying different printer selections until you find one that works.
3. Make sure that the printer is turned on and the paper is aligned in the printer.
4. Press **CTRL-C** to start the printer.

If all goes well, you should have a descriptive graph of the federal deficit and debt printed out. If not, you and your teacher may have to do some experimenting with the PRINT Menu to find out which choice works for you.

Interpreting the Graph

Return to the question posed at the beginning of this activity. What does this graph suggest to you about the relationship between the federal deficit and the federal debt?

Here are some examples of the kinds of observations you might make from this graph:

- The federal deficit was very small during the two decades between 1953 and 1973. Nevertheless, the public debt continued to grow during that period.
- Between 1943 and 1953 the deficit was reduced, but the federal debt continued to grow.
- In 1983 the federal deficit was about 200 billion dollars greater than it was in 1973, while the public debt increased by about 900 billion dollars during that same period.
- Do you see any evidence from this graph to suggest that the public debt is likely to go down?
- What do you think would happen to the federal debt if the deficit went to zero next year?
- How high can the federal deficit go? Can it go up to infinity? What could stop it? What are some of the consequences of higher federal deficits?
- What policies could the government take to decrease the deficit? The debt?

The data will not tell you the answers to all of these questions. You need to get more information about how the federal economy operates in order to make such interpretations.

On Your Own

- Produce a graph showing the percentage of the gross national product used by the federal government. Then compare that graph to your chart showing the public debt. Do you think the size of the federal debt has any effect on the percentage of GNP used by the government? How can you find out?

- Produce a graph showing the number of civilian and military federal employees for selected years since 1930.

- What other data from the *Fedspend* file can help you to understand what factors have contributed to the increasing federal budget?

- Collect articles from recent newsmagazines, in which different economists express their views on these topics.

Finishing Up

End your session on the computer in the usual manner. Put the disks away where they belong. You may want to put your graphs up on a bulletin board where others can learn from your work.

ACTIVITY 10: PROBLEMS AND PROJECTS

Working with a partner, select a project to work on using the *Fedspend* data. Follow the steps you have been using throughout these activities to do the following:

1. Consider and describe the problem. If necessary, break the problem into subproblems.
2. Define information needs.
3. Decide whether to use the *File*, *Report*, or *Graph* program to retrieve and print the data.
4. Define the Print Spec, Report Spec, or Graph Spec needed to present the data.
5. Test and debug the printout, report, or graph.
6. Print the data using *File*, *Report*, or *Graph*.
7. Interpret the data.

The following is a list of possible projects; your teacher may suggest others.

- Cutting the amount of government spending is often a popular campaign theme. Review the budgets of federal agencies and departments over the past 50 years. Have any had reductions in budget? Were the changes related to the political party in power?
- Make a pie chart showing the proportion of the federal budget spent on each of the agencies and departments listed in the file. Make such a chart for each of the following years: 1932, 1944, 1952, 1960, 1964, 1972, and 1980. Discuss how public policies are reflected in government spending.
- In what years did the number of military employees increase sharply? Does the increase correspond to years in which America was at war?
- Examine the pattern of federal income over time. What was the largest source of federal income in 1980? What was the largest source in 1940? In 1960? Can you find out how and why the sources of federal income have changed? Is there a relationship between an increase in income taxes and the political party in power?
- Examine the relationship of federal spending to gross national product over time. Is there a steady pattern of increasing percent of GNP spent by the government? Can you find any explanations for the changes in percent of GNP spent by the government? Does the government tend to spend a greater proportion of the GNP during times of economic expansion or during times of economic recession?

Scholastic pfs®:
U.S. Government
Data Bases

Elections

ELECTIONS: LESSON PLANS

Overview

The *Election* file provides results of American Presidential and Congressional elections. Information on popular and electoral votes, campaign strategies and issues, and voter participation are all included in the file.

Key Topic Areas in American Government

Major topics covered are Elections, Presidency, Congress, and Political Parties.

Description of File Contents and Organization

The *Election* form on disk is seven pages (screens) long. Figure A shows the form (see page 5). Each form contains statistics for one YEAR.

Page 1

Data on Page 1 indicates the Presidential CANDIDATES and their PARTIES.

Page 2

Page 2 contains information on ELECTORAL and POPULAR vote results, in absolute numbers and in percentages.

Page 3

The STRATEGIES and ISSUES of the campaign are described on Page 3.

Page 4

Page 4 contains data on VOTER PARTICIPATION. The number of persons eligible to vote, and the percentage of those eligible who in fact voted, are both given. Voting percentages are also listed for major demographic and ethnographic groups.

Page 5

Page 5 of the form shows the results of Congressional elections for the HOUSE and SENATE for each PRESIDENTIAL ELECTION YEAR and the subsequent OFF-YEAR election, beginning with 1856.

Page 6

Page 6 contains notes about the file.

Page 7

The references used to compile the data contained in this file are on Page 7 of the form.

Grade Level Suggestions

Students in grades six through eight may want to work only with data on Pages 1, 2, and 3. High school students and advanced junior high school students may want to work on all seven pages of the form.

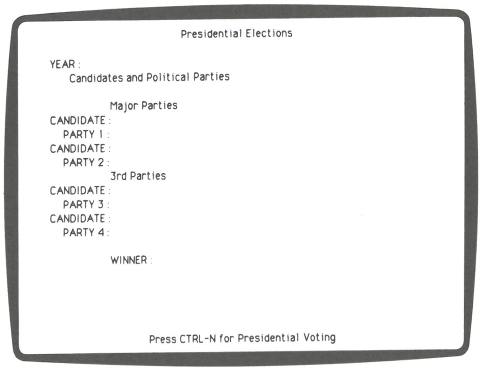
For younger students (below high school), you may decide to use just the first five activities; high school students should continue on through Activity 9.

Hardware Needed

Each activity lists what equipment and software are needed. All of the activities require an Apple® *II*e or IIc computer with a monitor and one disk drive. Activities 4 through 9 require a printer. Activities 6 through 9 require a second disk drive.

Classroom Management

Before each activity, make copies of the print materials and distribute them to students. Then refer to the activity-by-activity lesson plans, beginning on page 6. These are in chart form and will tell you both how to prepare for, and how much time to allot to, each activity.



```
                    Presidential Elections

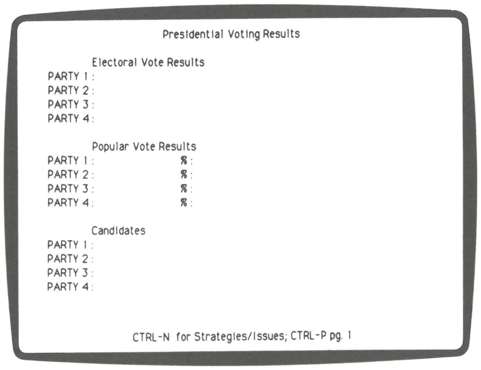
YEAR :
   Candidates and Political Parties

          Major Parties
CANDIDATE :
   PARTY 1 :
CANDIDATE :
   PARTY 2 :
          3rd Parties
CANDIDATE :
   PARTY 3 :
CANDIDATE :
   PARTY 4 :

          WINNER :


              Press CTRL-N for Presidential Voting
```

Page 1



```
                    Presidential Voting Results

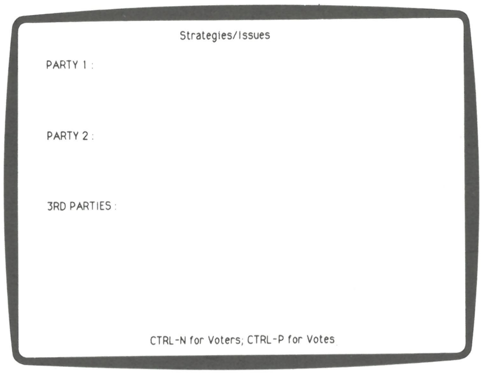
          Electoral Vote Results
PARTY 1 :
PARTY 2 :
PARTY 3 :
PARTY 4 :

          Popular Vote Results
PARTY 1 :                 % :
PARTY 2 :                 % :
PARTY 3 :                 % :
PARTY 4 :                 % :

          Candidates
PARTY 1 :
PARTY 2 :
PARTY 3 :
PARTY 4 :

          CTRL-N  for Strategies/Issues; CTRL-P pg. 1
```

Page 2



```
                    Strategies/Issues

PARTY 1 :



PARTY 2 :



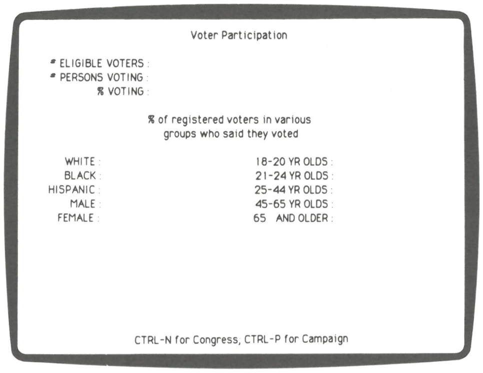
3RD PARTIES :






              CTRL-N for Voters; CTRL-P for Votes
```

Page 3



```
                    Voter Participation

# ELIGIBLE VOTERS :
# PERSONS VOTING :
        % VOTING :

          % of registered voters in various
              groups who said they voted

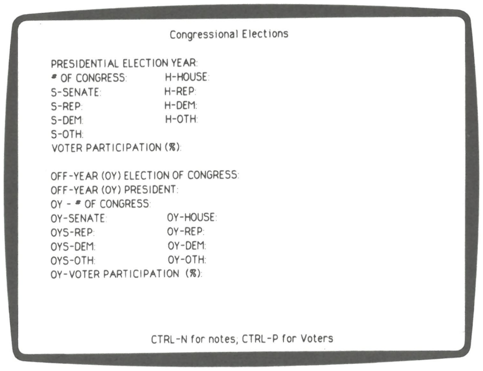
   WHITE :                          18-20 YR OLDS :
   BLACK :                          21-24 YR OLDS :
HISPANIC :                          25-44 YR OLDS :
    MALE :                          45-65 YR OLDS :
  FEMALE :                          65   AND OLDER :





          CTRL-N for Congress, CTRL-P for Campaign
```

Page 4



```
                    Congressional Elections

PRESIDENTIAL ELECTION YEAR:
# OF CONGRESS:        H-HOUSE:
S-SENATE:             H-REP:
S-REP:                H-DEM:
S-DEM:                H-OTH:
S-OTH:
VOTER PARTICIPATION (%):

OFF-YEAR (OY) ELECTION OF CONGRESS:
OFF-YEAR (OY) PRESIDENT:
OY - # OF CONGRESS:
OY-SENATE:             OY-HOUSE:
OYS-REP:               OY-REP:
OYS-DEM:               OY-DEM:
OYS-OTH:               OY-OTH:
OY-VOTER PARTICIPATION  (%):


              CTRL-N for notes, CTRL-P for Voters
```

Page 5

Figure A

Elections
Activity-by-Activity Lesson Plan Chart

Activity	Objectives	Preparation	Management	Time (per student)
1.	• Discover main topics and events in the *Election* file. • Retrieve information from a file. • Explore a file. • Type Retrieve Specs.	• Copy the *Election* file from the master disk onto the working disks.	• Schedule time on computer for student pairs. • Define terms for students: "electoral vote results" and "popular vote results."	35 minutes
2.	• Classify data into categories related to American Presidential and Congressional elections. • Decide on data needed to answer questions. • Interpret data.	• Copy the *Election* file from the master disk onto the working disks.	• Schedule time on computer for student pairs. • Introduce concepts such as voter participation and Congressional off-year elections for students.	25 minutes
3.	• Develop questioning skills. • Develop strategy to find answers to questions. • Set up Retrieve Specs: exact match, partial item match, multiple item match. • Narrow the search.	• Copy the *Election* file from the master disk onto the working disks.	• Schedule time on computer for student pairs. • Brainstorm questions with students.	35 minutes

(Continued on next page.)

Elections
Activity-by-Activity Lesson Plan Chart

Activity	Objectives	Preparation	Management	Time (per student)
4.	• Identify data needed to answer questions about elections. • Sequence and analyze historical data. • Analyze and interpret results of data collected. • Plan and interpret printout.	• Copy the *Election* file from the master disk onto the working disks. • Set up the printer.	• Schedule time on computer for student pairs. • Help students to understand the questions being asked. • Assist students in debugging printouts.	45 minutes
5.	• Define problem and break into subproblems. • Determine information needs. • Plan and interpret printout.	• Copy the *Election* file from the master disk onto the working disks. • Set up the printer.	• Schedule time on computer for student pairs. • Help students choose their projects. • Assist students in debugging printouts.	45 minutes
6.	• Determine data needed to test a hypothesis. • Validate data. • Analyze and interpret results of data collected. • Plan, test, debug, revise, and interpret printout.	• Copy the *Election* file from the master disk onto the working disks. • Set up the printer.	• Schedule time on computer for student pairs. • Assist with management of disks containing Pre-defined Report Specs.	45 minutes

(Continued on next page.)

Elections
Activity-by-Activity Lesson Plan Chart

Activity	Objectives	Preparation	Management	Time (per student)
7.	• Discuss implications of research and propose additional hypotheses. • Propose a course of action based on research results. • Estimate adequacy of information collected.	• Copy the *Election* file from the master disk onto the working disks. • Provide students with copies of worksheet for planning reports. • Set up the printer.	• Schedule time on computer for student pairs. • Help students to work through the activity and analyze the problem. • Help students to define their information needs, plan the printout, and interpret their results.	90 minutes
8.	• Identify a historical question or problem. • Determine statistical data required to answer questions. • Synthesize research. • Display data in graph format. • Discover trends. • Prepare and interpret graph of data.	• Copy the *Election* file from the master disk onto the working disks. • Set up a printer that will print graphics. • Provide students with graph paper if *PFS: Graph* is not available.	• Schedule time on computer for student pairs. • Help students to understand question. • Explain terms such as "x-axis." • Assist students in debugging printouts.	45 minutes
9.	• Define a historical problem or question. • Identify data needed to answer question. • Analyze and interpret results of data collected. • Synthesize research. • Infer cause-and-effect relationships. • Discover trends.	• Copy the *Election* file from the master disk onto the working disks. • Set up the printer. • Provide students with copies of worksheet for planning printouts.	• Schedule time on computer for student pairs. • Help students choose their projects. • Assist students in debugging printouts and reports.	

INTRODUCTION

This series of activities shows you how to use the data file named *Election*. The file contains information on both Presidential and Congressional elections.

These activities will teach you skills in managing information stored in computer data files. You can apply these skills to many other subjects in school and to other areas of your personal life.

Here are some examples of the questions you can answer using the *Election* file:

- What percentage of registered voters have actually voted in Presidential elections over the years? How about Congressional elections? Do more people vote in Congressional elections in the off years, when a President is not running for election?
- What has been the trend in voter participation? Did a greater percentage of people vote in the 1980 election than in the 1900 election? Do a greater percentage of men vote than women? What about young people versus older people? Can you make any predictions about the percentage of voter participation in 1988?
- Do most Democratic Presidents end their term of office with a Democratic Congress? Do Republicans usually gain or lose seats in Congress during off year elections when a Republican is President?
- What have been some of the major themes or issues throughout the history of Presidential elections? Has war been an issue? In which years? Did any President campaign with a promise to keep America out of war? How able was he to keep his promise?
- Compare the electoral vote results to the popular vote results for a sample of Presidential elections. Has a candidate ever received less than 50 percent of the popular vote but still won the election?
- What has been the history of "dirty" political campaigns in Presidential elections? Is it a recent problem?
- Have some Presidential campaigns focused more on the personality of the candidates than on the issues?
- The Republican and Democratic parties are the two main political parties in America today. When did they become the dominant parties?
- Some states have considered having bilingual ballots to increase voter participation among Spanish-speaking people. Examine the trend in Hispanic voter participation as compared to other cultural groups.
- In what years has the Senate been dominated by Republicans? Democrats? Is the House usually dominated by the same party as the Senate?
- During what years did Congress increase in number? Why?

There is practically no limit to the number and kinds of questions you can study—it depends on your curiosity and willingness to experiment.

Activities in This Unit

The first five activities in this unit make use of the *PFS: File* program and the *Election* data file.

Much of the data in this file is statistical information—that is, it contains facts and figures rather than text. The *PFS: Report* program is very helpful in analyzing and printing statistical data. Activities 6 and 7 show you how to use the *Report* program with the *Election* file.

Statistical kinds of data are often easier to study when they appear as a graph. Activity 8 shows how to prepare a graph of data using the *Graph* program. If you don't have the *Graph* program, you can draw your own graphs by hand.

Activity 9 suggests a few of the many interesting projects you can do on your own or as part of a class project.

The following is a list of the activities in this unit. Please do the activities in the order shown below.

Activity 1: Finding Winners in the *Election* File
Activity 2: Exploring the *Election* File
Activity 3: Asking Questions About Elections
Activity 4: Defining Your Information Needs
Activity 5: Planning Your Own Printouts
Activity 6: Planning Reports
Activity 7: Using *Report* to Analyze Election Data
Activity 8: Graphing Data
Activity 9: Projects

TODAY IS
MONDAY
5

You can do this activity whether or not you've ever used the *PFS: File* program before. You'll learn a little about elections and a little about the *File* program.

What You'll Do

First, you'll start up the *File* program. Next, you'll learn how to get information about certain elections onto the screen. The fancy phrase for what you will do is "information retrieval."

What You'll Need

- A *File* data disk called *Election* (Please check with your teacher to make sure a backup copy of the *Election* file has been made before you begin.)
- A *File* program disk
- An Apple *IIe* or IIc computer

Starting Up the File Program

The following is the standard procedure for starting up the *File* program.

1. Remove the *File* program from its protective jacket, and insert it into Drive 1. (On an Apple IIc, Drive 1 is the built-in drive.) Close the door on the disk drive.
2. If the computer is off, turn it on. Turn on the monitor. If the computer is already on, press the **CTRL**, **OPEN APPLE**, and **RESET** keys all at the same time. The PFS: File Function Menu will appear on the screen.
3. Remove the *File* program disk from Drive 1 and put it in its protective jacket. You won't need it any more in this lesson.
4. Insert the *Election* data disk into Drive 1 and close the door on the disk drive.

You have just completed the start-up procedure. From here on, any time you use the *File* program, follow the same procedure.

CAUTION: Never remove the disk from the disk drive or *turn the computer off unless the PFS: File Function Menu is on the screen.*

Selecting the SEARCH/UPDATE Function

The PFS: File Function Menu is on your screen. It lists six functions. The only function we are going to use right now is SEARCH/UPDATE. This is the part of the *File* program you use to find information that is stored in a file on a data disk.

1. Select SEARCH/UPDATE by typing *4*.

2. If FILE NAME is blank, leave it blank. If it says FILE NAME: *Election* that's okay, too. You don't need to type a file name when you choose SEARCH/UPDATE. The program will look at the file in Drive 1, and find out what the file name is.

3. Press **CTRL-C**. (Hold down **CTRL** and press **C**.) A blank Retrieve Spec will appear. You'll use the Retrieve Spec form to tell the *File* program which election year you want to look at (retrieve).

You have just completed the procedure for selecting the SEARCH/UPDATE function. From here on, whenever you see "select SEARCH/UPDATE from the PFS: File Function Menu," follow the procedure above.

Finding the 1980 Candidates

The blank Retrieve Spec is on your screen. (Check to see that the phrase "Retrieve Spec" is on the bottom of your screen. If it isn't, press **ESC**, and then select SEARCH/UPDATE over again.)

1. The cursor is sitting beside YEAR. Type *1980*.

2. Press **CTRL-C**. The form for 1980 will appear. Who was the Democratic candidate? Who won the election?

3. Notice the two "3RD PARTY" candidates. What does the phrase "third party" mean?

4. Look at the bottom of the form where it says WINNER. This data item tells the last name of the candidate who won the election, and his party affiliation. Democratic Presidents have a (D) beside their name, Republicans an (R), and names of other parties are followed by their first initials. This will enable you in later activities to search for all of the Democratic or Republican Presidents in the file.

5. Press **CTRL-N** to get to Page 2 of the form. Look at the ELECTORAL VOTE RESULTS. How many more electoral votes did Reagan win than Carter?

6. Look at the POPULAR VOTE RESULTS. What percent of the popular vote did Reagan win?

7. Notice that John Anderson was the Independent third party candidate. What percent of the popular vote did he receive? Did he receive any electoral votes?

The Electoral College vote results are used to elect the President. The Electoral College was established at the time of the Constitutional Convention. The Founding Fathers thought that a group of independent electors, based on state population, would be the best way to select the President. The people would select the electors, and the electors would vote. In the event of a tie, the House of Representatives would select the President. Since that time, the need for the Electoral College has been debated, with many people believing that the President should be elected by popular vote. But even today, the Electoral vote is the deciding one.

Getting the PFS: File Function Menu

When you are finished looking at a form on your screen and you want the PFS: File Function Menu again, press **ESC**.

Finding Reagan Another Way

In the last exercise, you found candidate Ronald Reagan by searching for the YEAR: *1980*. Here's another way to find a candidate who won an election:

The PFS: File Function Menu is on your screen.

1. Type *4*, and then press **CTRL-C**. The blank Retrieve Spec form will appear.

2. Press **TAB** until the cursor is beside WINNER.

3. Type *Reagan* **..** (Reagan dot dot). The "dot dot" means "anything." This way, you can retrieve information about a President without knowing which party he belonged to.

4. Press **CTRL-C**. What year appears? Was Reagan elected more than once? Press **CTRL-C** again. What year appears this time?

When you're finished looking at the form, press **ESC**. The PFS: File Function Menu will appear.

Another Way to Find a Candidate

William H. Taft was also a Presidential candidate more than once. Find the years in which he was a candidate. Here's the procedure:

The PFS: File Function Menu is on your screen.

1. Type *4*, and then press **CTRL-C**. The blank Retrieve Spec will appear.
2. Press **TAB** once to move the cursor to CANDIDATE above PARTY 1.
3. Next to CANDIDATE, type *William H. Taft*. It doesn't matter whether you use uppercase or lowercase letters. The *File* program will accept either.
4. Press **CTRL-C**. A form will appear.
5. Look at the election year on the screen. What year is shown? Did Taft win in that year?
6. Press **CTRL-C**. Another year form will appear. Did Taft win this year?
7. Press **CTRL-C**. A message will appear. How many forms were found?
8. Press **CTRL-C**. The PFS: File Function Menu will appear.

From Republicans to Democrats

The Republican and Democratic parties were not always the major political parties in our country. Let's see what political parties existed in 1800.

The PFS: File Function Menu is on your screen.

1. Type *4*, and then press **CTRL-C**. The Retrieve Spec will appear.
2. The cursor is beside YEAR. Type *1800*.
3. Press **CTRL-C**. A form will appear.
    - What were the two major political parties in 1800?
    - Who won the election?
    - Do you notice anything interesting about the winner and his party name?

The men who wrote the Constitution did not plan the development of political parties. But every President except George Washington has been supported by a political party. The first two major parties developed during Washington's Presidency: the Federalists (F) and the Jeffersonian Republicans (R/J). The Federalists fell apart after the 1816 election, and the Jeffersonian Republicans split in 1824 into the Democratic Republicans (D/R) and the National Republicans (N/R).

The National Republicans became the short-lived Whig Party. The Democratic Republicans, however, became today's Democratic Party. The modern Republican Party was founded in 1854.

Finding Jeffersonian Republicans

Have any other Presidents besides Jefferson been Jeffersonian Republicans? Here's how to find out:

The PFS: File Function Menu is on your screen.

1. Type *4*, and then press **CTRL-C**. The Retrieve Spec will appear.
2. Press **TAB** to move the cursor to WINNER.
3. Type **..***R/J* **..**(dot dot R/J dot dot).
4. Press **CTRL-C**. A form will appear.

What election year is on your screen? Who was elected President that year? Was the WINNER opposed in this election? By whom?

5. Press **CTRL-N** twice to get to Page 3 of the form. What was unusual about this election?
6. Press **CTRL-C**. What year appears this time? Who was the Presidential winner? Was he opposed in the election?

Continue pressing **CTRL-C** until you have seen all of the Presidents who were Jeffersonian Republicans. How many forms were found?

Press **CTRL-C**. The PFS: File Function Menu is on the screen.

Finding Abraham Lincoln

Find information about the elections in which Abraham Lincoln was elected President. If you know in what years he was elected, you can find him by searching for those years. Otherwise, use the Retrieve Spec WINNER: **..***Lincoln* **...**

What percent of the popular vote did Lincoln receive in 1860? You may be surprised to discover that Lincoln did not receive a majority of the popular vote. What percent of the popular vote did he receive in 1864?

On Your Own

Beginning with 1856, Party 1 is always Republican, and Party 2 is Democratic.

Franklin D. Roosevelt was a Democrat. See how many times he ran for President. Try to do this without a written procedure to follow. In what years did he run for office?

What is the highest percentage of the popular vote Roosevelt ever got? In what year did he receive this high popular vote?

Finishing Up

When you've finished with this activity, be sure the PFS: File Function Menu is on the screen. If it isn't, press **ESC**. Then remove the *Election* data disk from the disk drive and return it carefully to its protective jacket. Put the disk where your teacher tells you to keep it. Then turn off the computer.

ACTIVITY 2: EXPLORING THE ELECTION FILE

Whenever you use a computer data file that is new to you, you should first explore it. Find out what kinds of data are in it and how the data are organized.

Let's just explore the *Election* file for a while, to become familiar with our data.

What You'll Do

First, you'll start up the *File* program. Then you'll browse through the *Election* data file to find out what kinds of data are in the file.

What You'll Need

- An Apple *IIe* or IIc computer
- A *File* program disk
- An *Election* data disk

Starting Up the File Program

Start up the *File* program. If you don't remember how to do this, see Activity 1 or the Quick Start procedures.

Place the *Election* data disk in Drive 1.

The PFS: File Function Menu should be on your screen.

Looking at a Form

You may not know what information is in this file. You might guess, however, that a file on the subject of elections would probably have some information about the Presidential election of 1976.

To look at a form for a particular year, do the following:

Retrieving a Form

The PFS: File Function Menu is on your screen.

1. Type *4* to select SEARCH/UPDATE.

2. Press **CTRL-C**. The blank Retrieve Spec form for the file *Election* should appear on the screen. If it doesn't, you have the wrong data disk. Find the right one and start over.

3. Beside the data item name YEAR on the Retrieve Spec, type *1976*.

4. Press **CTRL-C**. The form for 1976 should be on your screen.

REMINDER: If you accidentally change any data on the form, press ***ESC*** *to avoid permanently changing the information on the disk.*

Notice that there were four candidates in 1976. Who was the Independent party candidate in this election year?

5. Press **CTRL-N** to see the data on Page 2 of the form. How many popular votes did Eugene McCarthy receive? How many electoral votes did he receive?

6. Press **CTRL-N** twice to see the data on Page 4 of the form. What percentage of eligible voters voted in this election?

Looking at the profile of voters, which age group had the highest percentage of people voting in this election? Which age group had the lowest percentage of people voting?

7. Press **CTRL-N** to see the data on Page 5. Was the Senate predominantly Republican or Democratic in this election?

Look at the off-year election of Congress in 1978. Did Republicans gain or lose seats in the Senate that year? What about in the House of Representatives?

When you are finished looking at the 1976 election form, press **ESC** to get the PFS: File Function Menu.

Browsing Through the File

Since you don't know much about the information in a file that is new to you, you don't know what Retrieve Specs to set up. A good way to find out what's in the file is to just browse though it, form by form. This is similar to the way you might browse through a book to get an idea of what's in it. Here's the procedure for doing that:

The PFS: File Function Menu is on your screen.

1. Type *4* to select SEARCH/UPDATE.
2. Press **CTRL-C**. The Retrieve Spec blank form will appear.
3. Leave the Retrieve Spec blank. Press **CTRL-C**. The last form in the file will appear on the screen. Notice the form number. This tells you the total number of forms in the file. How many are there?
4. Press **CTRL-N** to see the next page of the form. What is the title of this page?
5. Press **CTRL-N** again. What is the title of Page 3 of the form?
6. Press **CTRL-N** again. What is the title of Page 4 of the form?
7. When you are finished looking at a form, press **CTRL-C**. The next form will appear.
8. Keep browsing through the file, reading forms and pressing **CTRL-C**, **CTRL-N**, and **CTRL-P**. (**CTRL-P** takes you back a page.) When you feel you've looked at enough forms, press **ESC**. The PFS: File Function Menu will appear.

Looking at the Voters

In 1920, the Nineteenth Amendment to the Constitution was ratified. Women could no longer be denied the right to vote. Many of the states had already extended voting rights to women by 1920. Can you find an increase in the number of eligible voters between the election years of 1916 and 1920?

First, find out how many eligible voters there were in 1916.

Next, find out how many eligible voters there were in 1920.

Do you see any effect of women having been given the right to vote?

On Your Own

Find out how many eligible voters there were in the elections before and after the Voting Rights Act of 1961.

Review

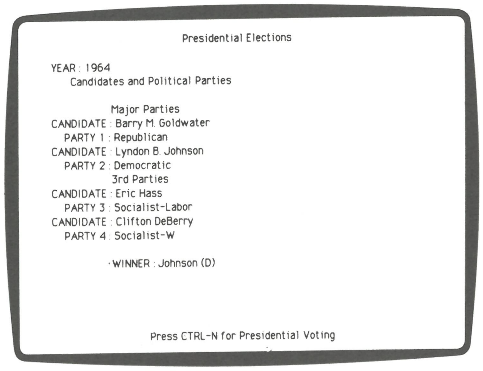
Check your understanding of the content and organization of the *Election* file by answering the following questions. If you're unsure of an answer, either look at the *Election* form in Figure 1, or go back to the computer and explore the file some more.

1. Page 1 of the *Election* form shows the results of a Presidential election. It shows both the major party candidates and the ________________________ party candidates.

2. To find out how many people were registered to vote in a Presidential election, look at the data item ________________________ on page 4 of the form.

3. The main strategies and issues of a Presidential campaign are shown on page _________ of the form.

4. To get information concerning the voter participation in off-year Congressional elections, look at the data item ________________________ on page 5 of the form.



```
                Presidential Elections

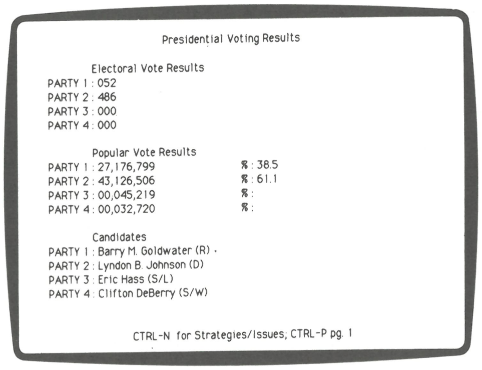
YEAR : 1964
   Candidates and Political Parties

              Major Parties
CANDIDATE : Barry M. Goldwater
   PARTY 1 : Republican
CANDIDATE : Lyndon B. Johnson
   PARTY 2 : Democratic
              3rd Parties
CANDIDATE : Eric Hass
   PARTY 3 : Socialist-Labor
CANDIDATE : Clifton DeBerry
   PARTY 4 : Socialist-W

            ·WINNER : Johnson (D)


           Press CTRL-N for Presidential Voting
```

Page 1



```
                  Presidential Voting Results

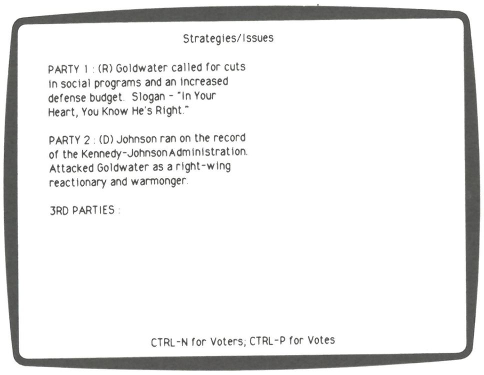
          Electoral Vote Results
PARTY 1 : 052
PARTY 2 : 486
PARTY 3 : 000
PARTY 4 : 000

          Popular Vote Results
PARTY 1 : 27,176,799                        % : 38.5
PARTY 2 : 43,126,506                        % : 61.1
PARTY 3 : 00,045,219                        % :
PARTY 4 : 00,032,720                        % :

          Candidates
PARTY 1 : Barry M. Goldwater (R) ·
PARTY 2 : Lyndon B. Johnson (D)
PARTY 3 : Eric Hass (S/L)
PARTY 4 : Clifton DeBerry (S/W)


        CTRL-N for Strategies/Issues; CTRL-P pg. 1
```

Page 2



```
                  Strategies/Issues

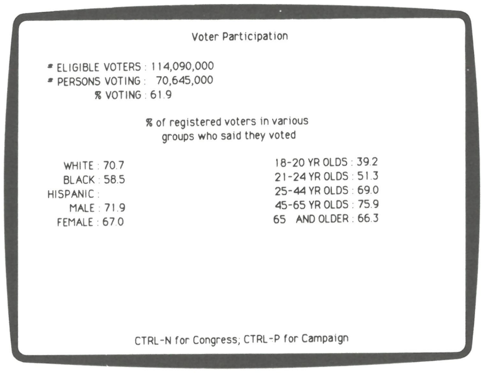
PARTY 1 : (R) Goldwater called for cuts
in social programs and an increased
defense budget. Slogan - "In Your
Heart, You Know He's Right."

PARTY 2 : (D) Johnson ran on the record
of the Kennedy-Johnson Administration.
Attacked Goldwater as a right-wing
reactionary and warmonger.

3RD PARTIES :


          CTRL-N for Voters; CTRL-P for Votes
```

Page 3



```
                    Voter Participation

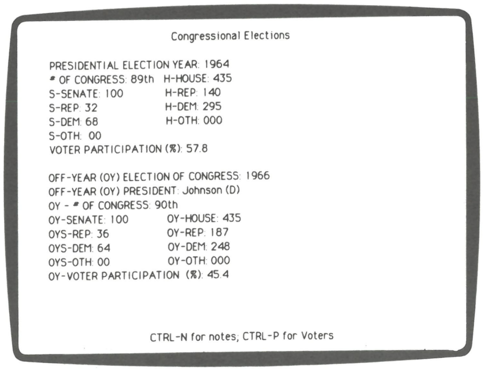
# ELIGIBLE VOTERS : 114,090,000
# PERSONS VOTING :   70,645,000
        % VOTING : 61.9

              % of registered voters in various
                 groups who said they voted

     WHITE : 70.7                    18-20 YR OLDS : 39.2
     BLACK : 58.5                    21-24 YR OLDS : 51.3
  HISPANIC :                         25-44 YR OLDS : 69.0
      MALE : 71.9                    45-65 YR OLDS : 75.9
    FEMALE : 67.0                    65   AND OLDER : 66.3


          CTRL-N for Congress; CTRL-P for Campaign
```

Page 4



```
               Congressional Elections

PRESIDENTIAL ELECTION YEAR: 1964
# OF CONGRESS: 89th  H-HOUSE: 435
S-SENATE: 100        H-REP: 140
S-REP: 32            H-DEM: 295
S-DEM: 68            H-OTH: 000
S-OTH:  00
VOTER PARTICIPATION (%): 57.8

OFF-YEAR (OY) ELECTION OF CONGRESS: 1966
OFF-YEAR (OY) PRESIDENT: Johnson (D)
OY - # OF CONGRESS: 90th
OY-SENATE: 100       OY-HOUSE: 435
OYS-REP: 36          OY-REP: 187
OYS-DEM: 64          OY-DEM: 248
OYS-OTH: 00          OY-OTH: 000
OY-VOTER PARTICIPATION  (%): 45.4


           CTRL-N for notes; CTRL-P for Voters
```

Page 5

Figure 1

Finishing Up

When you're finished using the computer for this activity, be sure the PFS: File Function Menu is on the screen. If it isn't, press **ESC**. Then remove the *Election* data disk from the disk drive and return it carefully to its protective jacket. Put the disk where your teacher tells you to keep it. Then turn off the computer.

ACTIVITY 3: ASKING QUESTIONS

Now that you know what data are in the file, you can begin asking questions and setting up Retrieve Specs to find the answers.

What You'll Do

In this lesson you'll retrieve information about elections. Then you'll learn how to set up Retrieve Spec forms to answer questions.

What You'll Need

- An Apple *II*e or IIc computer
- A *File* program disk
- An *Election* data disk

Starting Up the File Program

Start up the *File* program. The PFS: File Function Menu is on your screen and the *Election* data disk is in Drive 1.

Narrowing the Search

When you're looking for the data to answer a question, you don't want to retrieve more information than you need. In some situations you need to figure out a way to narrow the search. "Narrow the search" means to set up a Retrieve Spec in such a way that you will retrieve only the data you need to answer your question.

Consider the following question:

> Question: Which Presidential candidate has received the highest percentage of the popular vote?

Here is one method for searching for the answer to that question:

Think of a President who was very popular. Some possibilities are John Kennedy, Franklin Roosevelt, or Abraham Lincoln. Now, search for the years in which that President was elected. For example, search for WINNER: *Lincoln* ...

- What percent of the popular vote did that Presidential winner receive?
- Did he run for election in another year?
- What percent of the popular vote did he receive that year?

Next, search for all of the candidates who received a greater percentage of the popular vote than the one you just found. For example, if you found that Abraham Lincoln received 55.1 percent of the popular vote in 1864, you would make the following searches:

The PFS: File Function Menu is on your screen.

1. Select SEARCH/UPDATE by typing *4*.
2. Press **CTRL-C**. The blank Retrieve Spec form for the *Election* file will appear.
3. Press **CTRL-N** to get to Page 2 of the form. Press **TAB** until the cursor is beside the first % under POPULAR VOTE RESULTS.
4. Type > *55.1* (greater than 55.1).
5. Press **CTRL-C**. A data form will appear on the screen.
6. Write the name of the candidate and the percent of the popular vote he received. Then press **CTRL-C** to see the next form.

Republican Candidate	**Percent Popular Vote**

When you're finished, the PFS: File Function Menu is on the screen. Now go back to Step 3, above. This time, **TAB** the cursor next to the second % under POPULAR VOTE RESULTS, and continue on to Step 4.

Democratic Candidate	**Percent Popular Vote**

Do you have the answer to the question, "Which candidate has received the highest percentage of the popular vote?"

Searching for Important Words

In most Presidential elections there are certain themes or issues that are important to the voters. Page 3 of the *Election* file summarizes some of the key issues raised by the candidates. To trace some of these issues throughout the campaigns, you need to look for certain words. For example, when has war been a campaign issue? To find out, do the following:

If the PFS: File Function Menu is not on your screen, press **ESC** to get it.

1. Select SEARCH/UPDATE by typing *4* and pressing **CTRL-C**. The blank Retrieve Spec will appear.

2. Press **CTRL-N** twice to get to Page 3. The cursor is at STRATEGIES/ISSUES PARTY 1.

REMINDER: For election years 1856 through 1984, Party 1 is always Republican and Party 2 is always Democratic.

3. Type **..** *war*.. (dot dot space war dot dot).

4. Press **CTRL-C**. A form will appear on your screen. What year did you retrieve? If it is a year prior to 1856, what party is PARTY 1? ____________________

____

Look at Page 3 of the form. What was this party saying about war? ____________________

5. Press **CTRL-C** to see the next year. Look at Page 3 of the form to see what the war issues were.

Continue looking at the forms until you have found all of the years in which war was a campaign issue for PARTY 1.

Now use the same method to find out the years in which the Democrats or other PARTY 2 parties used war as a campaign issue. Were they the same years as you found before? Would you say that war has been an important issue in many Presidential elections?

Setting Up Your Own Retrieve Specs

Now that you know what data items are on the *Election* form, you can begin to ask questions and set up Retrieve Specs to search for answers.

Question: Was there ever a time when more than 60 percent of all eligible voters voted in a Presidential election?

Your Retrieve Spec would be on Page 4 of the form:

%VOTING: > *60.0*

What years did you find?

Question: What year's election is described as a "dirty" campaign? Who ran for office that year?

What would your Retrieve Spec be?

What year? ______________________ Who ran? ______________________

Question: When have Libertarians run as third party candidates for President?

What would your Retrieve Spec be?

HINT: There are two data items for third parties. You'll need to perform the same search twice.

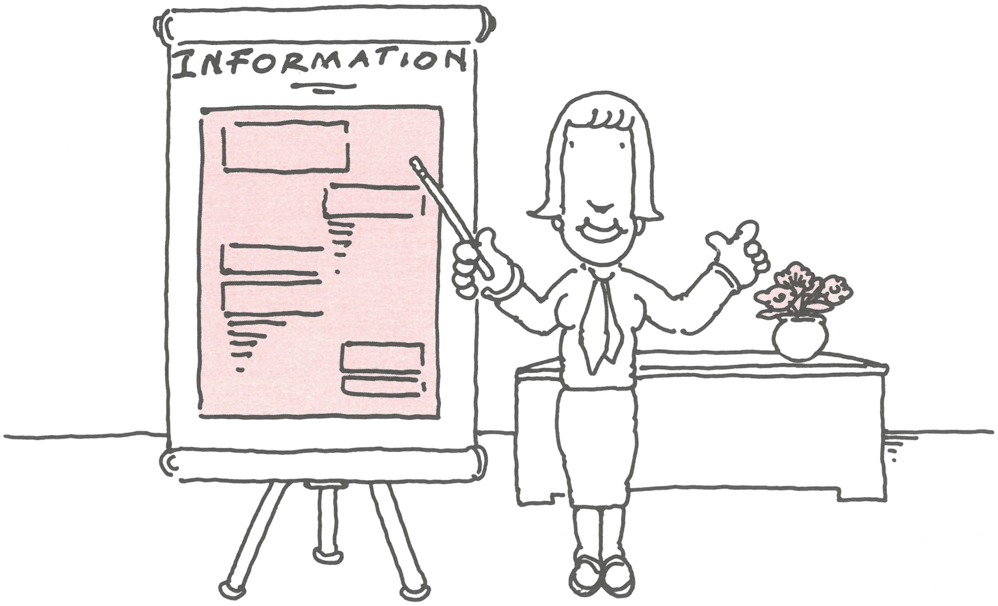
Challenging Your Partner

Make up a question about the elections, and figure out what Retrieve Spec you would use to answer the question. Try out your Retrieve Spec and see what answers you get. Then ask your partner to answer the same question, but don't explain the method you used to get the answer. Can your partner solve the problem? Did your partner think of a method different from yours?

Finishing Up

If the PFS: File Function Menu isn't on the screen, press **ESC** to get it there. Remove the *Election* disk from Drive 1 and put it in its protective jacket. Turn off the computer, unless someone else is waiting to use it. Put the disks where your teacher tells you to keep them.

ACTIVITY 4: DEFINING YOUR INFORMATION NEEDS



Rather than retrieving forms one at a time on the computer screen, you can have the *File* program print out a list of selected information for a particular study.

What You'll Do

In this activity, you will learn to plan a printout of data that will help you answer questions and solve problems. You'll use a worksheet for planning printouts, shown on page 26.

Here is the procedure:

1. Define what information you need in order to answer a question.

2. Set up a Print Spec that tells the *File* program what information to print.

3. Use the Print Forms option of the PRINT function to get the data printed out on paper.

4. Interpret the results of the printout and decide whether you need more information to answer your question.

What You'll Need

- A worksheet for planning printouts (see page 26)
- An Apple *II*e or IIc computer
- A *File* program disk
- An *Election* data disk
- A printer

WORKSHEET FOR PLANNING PRINTOUTS

Use this worksheet to plan printouts of data from a *PFS* file. After you answer the questions on this worksheet, take it to the computer and refer to it as you set up the Pre-defined Print Spec and then print the data.

Project or Student Name: ______________________________

Name of File: ______________________________

Defining Information Needs

What is the question or problem? ______________________________

____

____

What data items will be included on the printout? ______________________________

____

____

____

Which data item will be used for sorting the printout? ______________________________

Setting Up a Pre-defined Print Spec

What will you name the Pre-defined Print Spec (1–8 characters)? ______________________________

Printing the Data

1. Set up the Retrieve Spec. Which forms will be selected for printing? ______________________________

____

2. Set up the Print Options. Will you print the item names (Y or N)? ______________________________

Do you need to add linefeed characters for your printer (Y or N)? ______________________________

How many lines do you need to print from each form page? ______________________________
Use this number in the Lines Per Page option.

Defining Your Information Needs

The first step in planning a *File* printout is to define carefully the question or problem. For example, consider the following question:

> Question: Did a greater percentage of eligible persons vote in 1980 than voted a hundred years before? Has the trend over the past hundred years been in the direction of more eligible persons voting, or fewer?

On your worksheet for planning printouts, write in your own words the questions you are trying to answer. For example, you might break the problem down into several smaller questions, such as "What percent of eligible voters voted in the 1980 presidential election?" or "Was the 1980 percentage higher or lower than the 1880 percentage?" or "Has the percent of eligible persons voting been increasing since 1880?"

Deciding Which Forms to Select for Printing

The first thing you should decide is which forms should be selected for the printout. Usually only certain selected data forms from the file are needed on a particular printout.

The question asks you to look at 1980 and the previous one hundred years, so you'll want to select just the forms for those years for the printout. This means your Retrieve Spec will be:

YEAR: *=1880 ..1980*

This Retrieve Spec tells the *File* program to select all the forms for which the YEAR is between 1880 and 1980. It will ignore forms for the years before 1880 or after 1980.

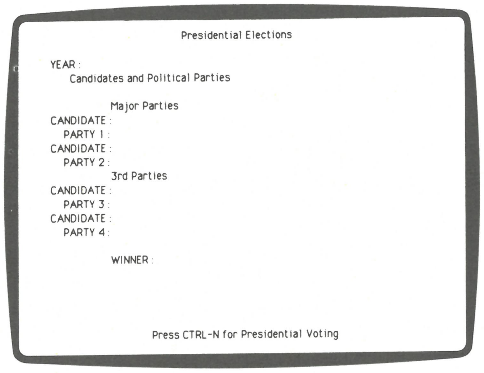
On your planning worksheet, find the place where it asks which forms will be selected for printing. Write the Retrieve Spec in the blank beside that question.

Deciding Which Data Items to Include in the Printout

Look at the *Election* form in Figure 2, and decide which of the data items would be useful in answering the question. The YEAR is, of course, needed. The question also talks about the percent of people voting, so you'll need the %VOTING data.

When you are defining information requirements, try to include only those data items that are really needed for the purpose at hand. For the problem you are working on now, for example, the only data items needed are YEAR and %VOTING.

On your worksheet, write YEAR and %VOTING in the blanks where it asks, "What data items will be included on the printout?"



```
                   Presidential Elections

YEAR :
   Candidates and Political Parties

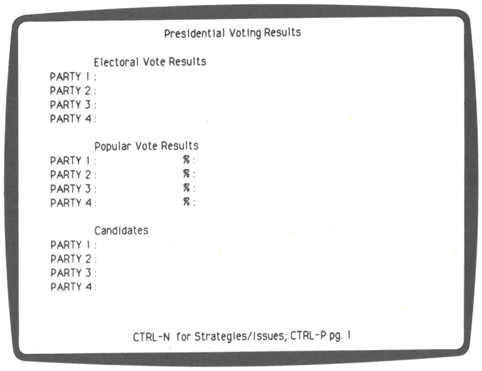
            Major Parties
CANDIDATE :
   PARTY 1 :
CANDIDATE :
   PARTY 2 :
            3rd Parties
CANDIDATE :
   PARTY 3 :
CANDIDATE :
   PARTY 4 :

            WINNER :



                 Press CTRL-N for Presidential Voting
```

Page 1



```
                 Presidential Voting Results

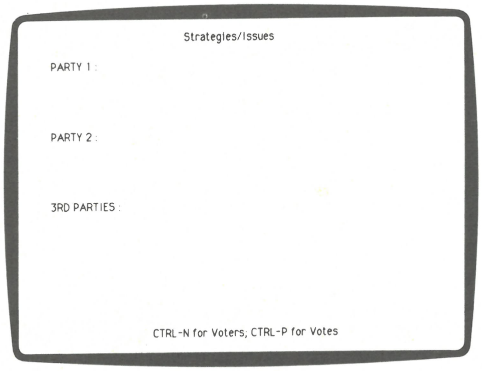
        Electoral Vote Results
PARTY 1 :
PARTY 2 :
PARTY 3 :
PARTY 4 :

        Popular Vote Results
PARTY 1 :                  % :
PARTY 2 :                  % :
PARTY 3 :                  % :
PARTY 4 :                  % :

        Candidates
PARTY 1 :
PARTY 2 :
PARTY 3 :
PARTY 4 :


        CTRL-N  for Strategies/Issues; CTRL-P pg. 1
```

Page 2



```
                    Strategies/Issues

PARTY 1 :




PARTY 2 :



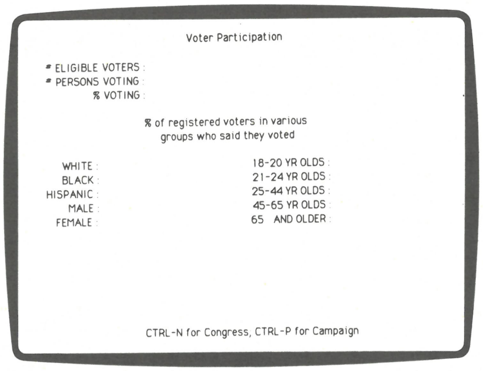

3RD PARTIES :






             CTRL-N for Voters, CTRL-P for Votes
```

Page 3



```
                    Voter Participation

 # ELIGIBLE VOTERS :
 # PERSONS VOTING :
          % VOTING :

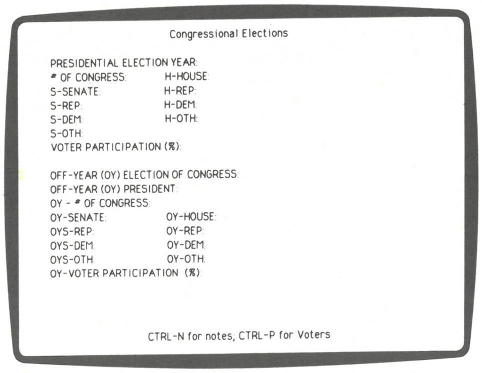
              % of registered voters in various
                  groups who said they voted

     WHITE :                        18-20 YR OLDS :
     BLACK :                        21-24 YR OLDS :
  HISPANIC :                        25-44 YR OLDS :
      MALE :                        45-65 YR OLDS :
    FEMALE :                        65   AND OLDER :




           CTRL-N for Congress, CTRL-P for Campaign
```

Page 4



```
                  Congressional Elections

PRESIDENTIAL ELECTION YEAR:
# OF CONGRESS:        H-HOUSE:
S-SENATE:             H-REP:
S-REP:                H-DEM:
S-DEM:                H-OTH:
S-OTH:
VOTER PARTICIPATION (%):

OFF-YEAR (OY) ELECTION OF CONGRESS:
OFF-YEAR (OY) PRESIDENT:
OY - # OF CONGRESS:
OY-SENATE:            OY-HOUSE:
OYS-REP:              OY-REP:
OYS-DEM:              OY-DEM:
OYS-OTH:              OY-OTH:
OY-VOTER PARTICIPATION  (%):



            CTRL-N for notes; CTRL-P for Voters
```

Page 5

Figure 2

Listing Data in Order

In what order should the data be listed in the printout? There are a couple of possibilities. You could list the years in chronological order. That is, you could have the program sort the forms by YEAR. However, the question asks whether voter participation was increasing or decreasing over the past hundred years. So you might want to sort by %VOTING. This will cause the program to list the years in order by lowest to highest %VOTING.

Choose which you will use for sorting—YEAR or %VOTING. (Remember, there often isn't any single "right way" to retrieve information. Sometimes you have to try a couple of different ways before you find the most useful approach.)

On your planning worksheet, write the data item you'll use for sorting.

Naming the Pre-defined Print Spec

What name will you give to the Print Spec? It should be related to the data or problem This example uses VOTING, but you can use any name you like. Recall that the name must be eight characters or less.

On your planning worksheet, write the name you'll use for your Pre-defined Print Spec.

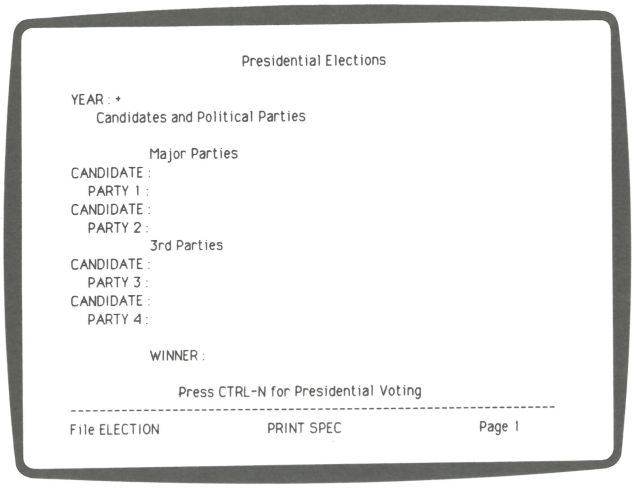
Setting Up a Pre-defined Print Spec

Now that you have planned your printout, you can set up the Pre-defined Print Spec. The Print Spec will tell the *File* program which data items you want printed and in what order.

First start up the *File* program in the usual manner. If you don't remember how to do this, refer to Activity 1 or the Quick Start procedure.

The PFS: File Function Menu is on your screen and the *Election* data disk is in Drive 1.

1. Select the PRINT function by typing *5*. Press **TAB**.
2. Type the File name, *Election*. Press **CTRL-C**. The Print Menu will appear.
3. Select Define Print Spec by typing *2*. Press **CTRL-C**. The Current Pre-defined Print Specs screen will appear.
4. Type your Print Spec name. This example uses VOTING.
5. Press **CTRL-C**. The blank Print Spec form will appear on the screen.
6. Type a plus sign (+) beside YEAR on Page 1 of the blank Print Spec. The + tells the *File* program to print this data item and to print the next data item on the same line.
7. Press **CTRL-N** to get to Page 4 of the form.
8. Press **TAB** to move the cursor to %VOTING.
9. Type *X*. This tells the program to print this data item. Then type *S*. (Recall that S stands for "sort.")
10. Your Print Spec should look like Figure 3.
11. When you have completed the Print Spec, press **CTRL-C** to store it on the disk.



```
                     Presidential Elections

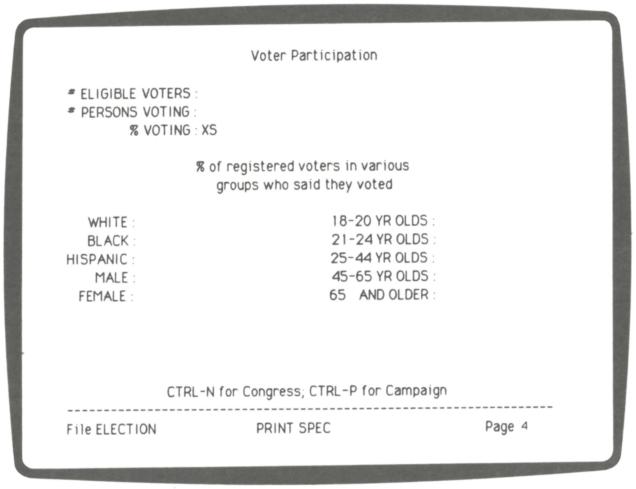
YEAR : +
   Candidates and Political Parties

          Major Parties
CANDIDATE :
  PARTY 1 :
CANDIDATE :
  PARTY 2 :
          3rd Parties
CANDIDATE :
  PARTY 3 :
CANDIDATE :
  PARTY 4 :

          WINNER :

              Press CTRL-N for Presidential Voting
-------------------------------------------------------------------
File ELECTION              PRINT SPEC                 Page 1
```

Page 1



```
                      Voter Participation

# ELIGIBLE VOTERS :
# PERSONS VOTING :
       % VOTING : XS

              % of registered voters in various
                groups who said they voted

  WHITE :                       18-20 YR OLDS :
  BLACK :                       21-24 YR OLDS :
HISPANIC :                      25-44 YR OLDS :
   MALE :                       45-65 YR OLDS :
 FEMALE :                       65   AND OLDER :


            CTRL-N for Congress, CTRL-P for Campaign
-------------------------------------------------------------------
File ELECTION              PRINT SPEC                 Page 4
```

Page 4   Figure 3

Printing the Data

Now you can use your Pre-defined Print Spec to print out your data. Make sure that your printer is connected to your computer, the printer is turned on, and the paper is aligned in the printer. The PFS: File Function Menu should be on your screen.

Setting Up the Retrieve Spec

1. Type *5*, and then press **CTRL-C**. The Print Menu will appear.

2. Choose the Print Forms option by typing the number *1*. Press **CTRL-C**. The blank Retrieve Spec will appear. The program will ask, "Which forms do you want to select for printing?" Refer to your notes. What Retrieve Spec were you going to use?

3. Beside YEAR, type *=1880 .. 1980*.

4. *Press **CTRL-C**. The Print Options Menu will appear.*

Filling in the Print Options

Fill in the Print Options as shown below. Use **TAB** to get from one option to another.

PRE-DEFINED PRINT SPEC: *VOTING* (or whatever you've chosen)
PRINT ITEM NAMES: *N*
ADD LINEFEED CHARACTERS (Y/N): *Y*
LINES PER PAGE: *3*
NUMBER OF COPIES: *1*

NOTE: If you have an older version of the File *program, your Print Options Menu looks a little different from this. Instead of ADD LINEFEED CHARACTERS:* Y, *use OUTPUT DEVICE:* L.

Now press **CTRL-C**. The *File* program begins searching the file for the forms you have requested, and starts sorting the forms. Then the printing begins.

If the printer does not print your data, make sure that it is turned on and connected to your computer.

Interpreting the Printout

Your printout provides information on the percent of eligible persons voting in Presidential elections from 1880 to 1980. You have in your printout "raw data," or numbers and figures that have little meaning until you "make sense" of, or interpret, the information. The data only have meaning in relation to some question or hypothesis.

Go back to the original questions you wrote on your planning worksheet. The first question asked whether a greater percentage of eligible persons voted in 1980 than a hundred years earlier.

The first thing to do is decide which information on the printout is most useful in answering the question.

If you sorted the data by YEAR, you can look at the first year on the list, 1880, and see what the %VOTING was in that year. Then look at the last year on the list, 1980, and see what the %VOTING was in that year. In which year was the %VOTING higher?

If you sorted the data by %VOTING, the last data item on your list will be the highest %VOTING for the years printed. What year was it?

If you sorted your printout by YEAR, look at someone else's printout that was sorted by %VOTING. Notice that 1980 is about in the middle of the list. In which year was the %VOTING the lowest?

Which way of sorting—by YEAR or by %VOTING—do you think is most useful for answering the questions about voter participation?

Finishing Up

To finish the session, get the PFS: File Function Menu on your screen. Remove the *Election* data disk from the disk drive and put it back in its protective jacket. Turn off the computer unless someone is waiting to use it. Put the disks wherever your teacher tells you to keep them.

ACTIVITY 5: PLANNING YOUR OWN PRINTOUTS

The last activity showed you step-by-step procedures for determining information requirements and preparing a printout of data. This lesson teaches you to plan your own printouts.

What You'll Do

You will work with your partner to define the information you need in order to answer questions. You'll use a worksheet for planning printouts. Next, you'll set up a Pre-defined Print Spec and print out your data. Then you'll analyze the printout, and decide whether you need more information in order to answer the question.

What You'll Need

- A worksheet for planning printouts (see page 35)
- An Apple *II*e or IIc computer
- A *File* program disk
- An *Election* data disk
- A printer

WORKSHEET FOR PLANNING PRINTOUTS

Use this worksheet to plan printouts of data from a *PFS* file. After you answer the questions on this worksheet, take it to the computer and refer to it as you set up the Pre-defined Print Spec and then print the data.

Project or Student Name: ____________________

Name of File: ____________________

Defining Information Needs

What is the question or problem? ____________________

What data items will be included on the printout? ____________________

Which data item will be used for sorting the printout? ____________________

Setting Up a Pre-defined Print Spec

What will you name the Pre-defined Print Spec (1–8 characters)? ____________________

Printing the Data

1. Set up the Retrieve Spec. Which forms will be selected for printing? ____________________

2. Set up the Print Options. Will you print the item names (Y or N)? ____________________

Do you need to add linefeed characters for your printer (Y or N)? ____________________

How many lines do you need to print from each form page? ____________________
Use this number in the Lines Per Page option.

Defining Your Information Needs

The following problem relates to the issues of voter participation:

Problem: In 1971, the Twenty-Sixth Amendment to the Constitution was ratified, lowering the minimum voting age from 21 to 18 years old. Compare voter participation rates among 18–20 year olds and 21–24 year olds. Is the younger group more likely to vote than the older? Is there a consistent pattern? Which age group listed has the highest voter participation rate?

Designing the Printout

Will you get the information you need in one printout or in two? Why?

(Remember that there isn't always one "right answer" to such questions. You may have to experiment before you find the printout that gives you just what you need.)

On your planning worksheet, write down the questions you will try to answer.

Deciding Which Forms to Print

Decide on the Retrieve Spec that you will use to tell the *File* program which forms you want to include in your printout. There are many different ways of doing this. If you know in what election year 18–20 year olds first had the vote, you could use that information to set up your Retrieve Spec by YEAR. For example, if they got the vote in 1970 you would use YEAR: *=1970 .. 1980* to select all the forms that have data about this voter group.

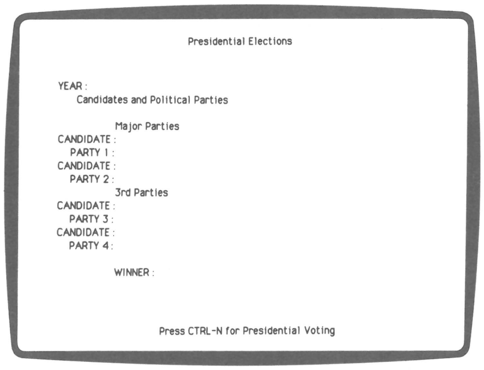
If you don't know in what year they started voting, you could use 18–20 YR OLDS: *> 1* as a method for selecting forms that have data for this data item.

Write the Retrieve Spec on your planning worksheet. If you're going to make two separate printouts, will you use the same Retrieve Spec for both?

Selecting Data Items to Include in the Printout

What data items are needed to answer each of your questions? Refer as needed to the *Election* form in Figure 4 on page 37 to remember what the data item names are.

On your planning worksheet, list the data items to be included in the printouts.



```
              Presidential Elections

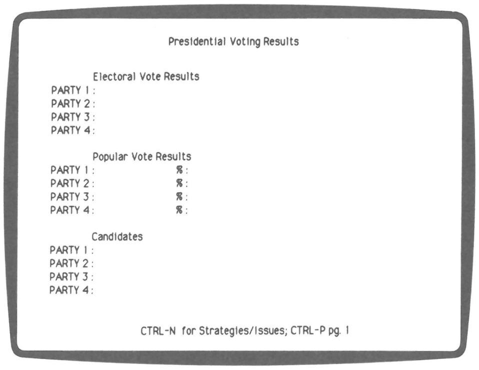
YEAR :
    Candidates and Political Parties

            Major Parties
CANDIDATE :
  PARTY 1 :
CANDIDATE :
  PARTY 2 :
            3rd Parties
CANDIDATE :
  PARTY 3 :
CANDIDATE :
  PARTY 4 :

            WINNER :

        Press CTRL-N for Presidential Voting
```

Page 1



```
              Presidential Voting Results

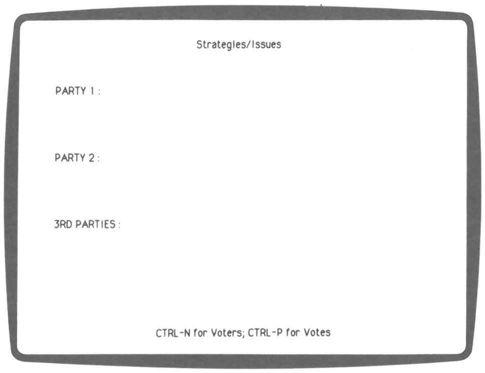
        Electoral Vote Results
PARTY 1 :
PARTY 2 :
PARTY 3 :
PARTY 4 :

        Popular Vote Results
PARTY 1 :                 % :
PARTY 2 :                 % :
PARTY 3 :                 % :
PARTY 4 :                 % :

        Candidates
PARTY 1 :
PARTY 2 :
PARTY 3 :
PARTY 4 :

     CTRL-N  for Strategies/Issues; CTRL-P pg. 1
```

Page 2



```
              Strategies/Issues

PARTY 1 :



PARTY 2 :

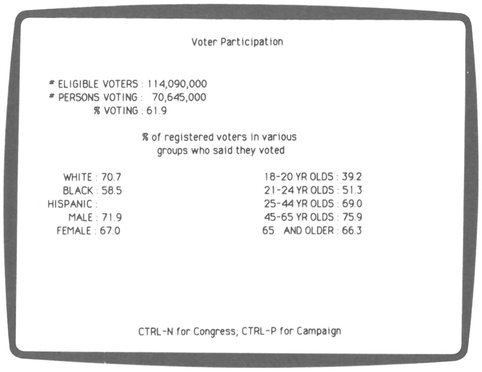


3RD PARTIES :




        CTRL-N for Voters; CTRL-P for Votes
```

Page 3



```
                 Voter Participation

# ELIGIBLE VOTERS : 114,090,000
# PERSONS VOTING :   70,645,000
        % VOTING : 61.9

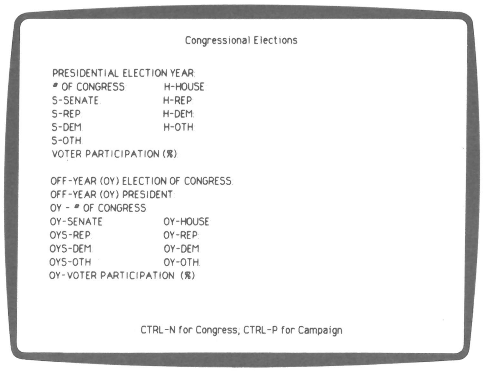
            % of registered voters in various
              groups who said they voted

   WHITE : 70.7                  18-20 YR OLDS : 39.2
   BLACK : 58.5                  21-24 YR OLDS : 51.3
HISPANIC :                       25-44 YR OLDS : 69.0
    MALE : 71.9                  45-65 YR OLDS : 75.9
  FEMALE : 67.0                  65   AND OLDER : 66.3




        CTRL-N for Congress; CTRL-P for Campaign
```

Page 4



```
              Congressional Elections

PRESIDENTIAL ELECTION YEAR:
# OF CONGRESS:          H-HOUSE:
S-SENATE:               H-REP:
S-REP:                  H-DEM:
S-DEM:                  H-OTH:
S-OTH:
VOTER PARTICIPATION (%):

OFF-YEAR (OY) ELECTION OF CONGRESS:
OFF-YEAR (OY) PRESIDENT:
OY - # OF CONGRESS
OY-SENATE               OY-HOUSE:
OYS-REP:                OY-REP:
OYS-DEM:                OY-DEM
OYS-OTH                 OY-OTH:
OY-VOTER PARTICIPATION  (%)


        CTRL-N for Congress; CTRL-P for Campaign
```

Page 5

Figure 4

Listing the Data in Order

On your planning worksheet, write which data item will be used for sorting the printout.

Naming Your Pre-defined Print Spec

The name you use must be eight characters or less, and should have some meaning to you.

On your planning worksheet, write your Pre-defined Print Spec name.

Setting Up a Pre-defined Print Spec

Now that you and your partner have a clear plan for how to proceed, you are ready to prepare the printout of the data. If you're going to make separate printouts for the two questions, set up two Pre-defined Print Specs.

Start up the *File* program and use the Define Print Spec option of the PRINT function to define your Print Spec.

Refer to the notes on your planning worksheet regarding the data items you want printed and the data item to use for sorting. Type the codes (*X*, *+*, and *S*) in the Print Spec form.

Printing the Data

Use the Print Forms option of the PRINT function to make the printouts you have planned. Do they look the way you wanted them to? If not, go back and change your Pre-defined Print Spec so that you will get the data you need in order to answer the questions.

Interpreting the Data

Does your printout give you the information you need in order to answer the original questions? What additional information do you need? Can you get it from the *Election* file, or do you need to go to some other reference source?

Do you see a difference in voter participation among the different age groups? Have there been changes in participation since 1970? Has the 18–20-year-old participation increased since 1970?

Finishing Up

When you've finished working on the computer, finish up in your usual manner, putting the disks where they belong. You may want to put your printout on the wall where classmates can see the results of your work and learn from it.

ACTIVITY 6: PLANNING REPORTS

The *PFS: Report* program is especially useful in working with files of statistics like *Election*. *Report* will do computations on the data as well as presenting it in a readable form.

What You'll Do

As before, you will first consider a sample problem and define your information needs. You will use a worksheet for planning reports. Then, you will learn how to use the *Report* program to get information from the *Election* file. Finally, you will interpret the data from the report.

What You'll Need

- A worksheet for planning reports (see page 40)
- An Apple *II*e or IIc computer
- A printer
- An *Election* data disk
- A *Report* program disk.
- A *Sortwork* disk

NOTE: If your classroom or computer lab has computers with only one disk drive and no printer, you can use those machines when you do the section "Set Up the Report" on the computer. You only need the second disk drive and printer when you are actually printing the report.

WORKSHEET FOR PLANNING REPORTS

Use this worksheet to plan a report from a *PFS* file using *PFS: Report*. After you answer the questions on this worksheet, take it to the computer and refer to it as you Pre-define a Report, set new headings, and then print the report.

Project or Student Name: ______________________________

Name of File: ______________________________

Defining Information Needs

What is the question or problem? ______________________________

____

What data item will be used to sort the report? ______________________________
(This data item will be in Column 1.)

What data item will go in each column? (For a Derived Column, write the formula.)

Column 1 ____________________

Column 2 ____________________

Column 3 ____________________

Column 4 ____________________

Column 5 ____________________

Column 6 ____________________

Pre-defining a Report

What will you name the Pre-defined Report (1–8 characters)? ____________________

Setting New Headings

List the new headings you will set for the columns.

Data Item Name	**New Heading**

Printing the Report

1. Set up the Retrieve Spec. Which forms will be selected for reporting? ____________

   ____

2. Set up the Report Options. What title do you want printed at the top of each page of the report? ______________________________

Do you need to add linefeed characters for your printer (Y or N)? ____________

Considering the Problem

Problem: American politics is often viewed as a two-party system. Third-party candidates have been elected to the House and Senate, but not to the Presidency. However, some third party candidates have won enough votes to affect the outcome of a Presidential election. Who were these third party candidates? Did any of them receive electoral votes?

The *Report* program is useful for making such comparisons, because it will list the data items side-by-side in neat columns on the page.

Write down the problem on your worksheet for planning reports. If you can, restate it in your own words. For example, one student wrote on her worksheet, "List the third party electoral vote and percent of popular vote side-by-side for each year." Another student wrote, "Did any third party candidates receive more than one percent of the popular vote? Did any receive electoral votes?"

Defining Information Needs

What information is needed in order to answer the questions? Here are the data items you'll need:

YEAR
Electoral Vote PARTY 3
Popular Vote PARTY 3%
Candidates PARTY 3

Since you want to determine both the electoral vote and the percent of the popular vote, you'll want to see these two data items side-by-side. (Notice that there are two categories for third party candidates. You may want to repeat this process later using PARTY 4 data items.)

In planning a report, it is useful to make a hand sketch of the columns you want. Figure 5 shows a sketch of the report for this problem.

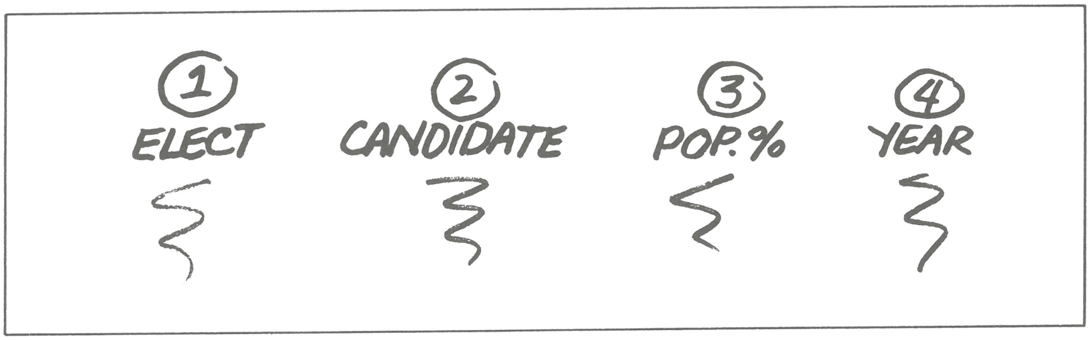


Figure 5

Deciding Which Data Goes in Column 1

The *Report* program puts the data in order based on which data item is in Column 1. You probably would want to have this report sorted by electoral vote, so ELECTORAL VOTE PARTY 3 goes in Column 1.

On your planning worksheet, list the data items that will go in each column of the report. Percent of the Popular Vote will go in Column 3. Column 2 will be the Candidate and Column 4 will be the YEAR.

Choosing a Report Spec Name

You will need a name for the Pre-defined Report. It must be eight characters or less. This example will use THIRD.

Write the name of your Pre-defined Report on your planning worksheet.

Choosing Headings for the Columns

The *Report* program uses the data item names from the form as the column headings on the report. But often the data item names in the file are too long to fit as column headings. When you decide on headings for your columns, you need to think about how wide the actual data will be in the column. For example, the percent of the popular vote data (for instance, 13.5) is four characters wide. To make a neat-looking report, you will need to change the column heading to something shorter, such as POP %.

On your planning worksheet, list the new headings you will set for your columns. The following are used in this example:

Data Item Name	**New Heading**
YEAR	Year
Electoral Vote Results PARTY 3	Elect
Popular Vote Results PARTY 3%	Pop %
Candidates PARTY 3	Candidate

Remember, an additional printout will be necessary to look for candidates listed next to PARTY 4.

Deciding on a Retrieve Spec

Which forms in the file will be selected for the report? We only want data for third party candidates who received more than one percent of the popular vote. On your planning worksheet, write this Retrieve Spec:

Popular Vote Results PARTY 3: *% > 1.*

Choosing a Title for the Report

Decide on a title for the report. The program will print the title at the top of each page of the report. The title must be no longer than 32 characters.

This example will use "Popular Third Party Candidates" as the title.

Write on your planning worksheet the title you will use for your report.

Completing the Planning Worksheet

There is one more detail you need to plan before your worksheet is complete. Do you know whether your printer needs to have a linefeed character sent to it by the program? If you are not sure, the safest approach is to say yes. If you find that your reports have too many spaces between lines, you will know the printer does not need the linefeed.

Your plan is now complete. If you don't have time to finish this activity today, this is a good breaking point.

Setting Up the Report on the Computer

Now that you have planned your report, you are ready to prepare the report on the computer. Take your planning worksheet to the computer with you.

First, start up the *Report* program:

1. Place the *Report* program disk in Drive 1.
2. If the computer is turned off, turn it on. Turn on the monitor. If the computer is already on, press these three keys all at once: **CTRL**, **OPEN APPLE**, and **RESET**.
3. When the PFS: Report Menu appears on the screen, remove the *Report* program disk from the disk drive.
4. Insert the *Election* data disk in Drive 1.
5. Insert the *Sortwork* disk in Drive 2.

Pre-defining a Report

The PFS: Report Menu is on your screen.

1. Type *2* to select Pre-define a Report. Press **TAB**.
2. Type the file name, *Election*. Press **CTRL-C**. The Pre-defined Report screen will appear.
3. Type your report name THIRD. Press **CTRL-C**. The blank Report form appears.
4. On the Report form, type *5* next to the YEAR data item. This will cause the *Report* program to put the YEAR data in Column 5 of the report.
5. Press **CTRL-N** for Page 2 of the form.
6. Press **TAB** to get the cursor to Electoral Vote Results PARTY 3.
7. Type *1*. This will cause the *Report* program to place the Electoral Vote Results in Column 1, and to sort by this data item.
8. Press **TAB** to move the cursor to PARTY 3%. Type *4*.
9. Press **TAB** to move the cursor to Candidates PARTY 3. Type *2*.
10. Look over your Report Spec to see that it is complete and accurate. Then press **CTRL-C** to store the Report Spec. The PFS: Report Menu will appear.

Setting New Column Headings for the Report

Now you set new headings for the columns. Here's the procedure:

The PFS: Report Menu is on the screen.

1. Type *3* to select Set New Headings.
2. Beside YEAR on Page 1 of the form, type *Year*.
3. Display Page 2 of the form by pressing **CTRL-N**.
4. Beside Electoral Vote Results PARTY 3, type *Elect*.
5. Press **TAB**. Beside Popular Vote Results PARTY 3 %, type *Pop %*.
6. Press **TAB**. Beside Candidates PARTY 3, type *Candidate*.
7. Press **CTRL-C** to store the new headings. The PFS: Report Menu will appear on the screen.

Printing the Report

You are now ready to print the report. Make sure the printer is turned on and the paper is aligned in the printer.

The PFS: Report Menu is on your screen.

1. Type *1* to select Print a Report. The blank Retrieve Spec form will appear.
2. Look at your planning worksheet to see what Retrieve Spec you are going to use for this report. Type your Retrieve Spec.
3. Press **CTRL-C**. The Report Options screen will appear.
4. Refer to your planning worksheet to see what title you planned for your report. Type the title of your report. Press **TAB**.
5. Type your Pre-defined Report name. This example uses THIRD, but you should use the name you wrote on your planning worksheet.
6. If your printer requires a linefeed, press **TAB** to move the cursor to the Add Linefeed Characters option, and type *Y*. Press **CTRL-C**.

The *Report* program begins selecting the forms for printing. When the printout is complete, decide if you need to have an additional printout, make the alterations you need, and proceed in the same manner outlined above. When you are finished, end the session on the computer in the usual manner, putting the disks where they belong. Your report should look like Figure 6 on page 45.

Popular Third Party Candidates

ELECT	CANDIDATE	POP%	YEAR
	James B. Weaver (Greenback)	03.3	1880
000	Allen L. Benson (S)	03.2	1916
	Benjamin Butler (Greenback)	01.7	1884
	Clinton Fisk (Prohibition)	02.2	1888
	Eugene V. Debs (S)	02.8	1908
		03.0	1904
		03.4	1920
	James G. Birney (Liberty)	02.3	1844
	John B. Anderson (I)	06.6	1980
	John C. Wooley (Prohibition)	01.5	1900
	John G. Schmitz (Amer. Party)	01.4	1972
	John P. Hale (Free Soil)	04.9	1852
	Martin Van Buren (Free Soil)	10.1	1848
	Norman Thomas (S)	02.2	1932
	William Lemke (Union)	02.0	1936
008	Millard Fillmore (American)	21.1	1856
013	Robert LaFollette (Prog.)	16.6	1924
022	James B. Weaver (Populist)	08.5	1892
026	Hugh L. White (W)	09.7	1836
046	George C. Wallace (A/I)	13.5	1968
072	John Breckinridge (N/D)	18.2	1860
088	Theodore Roosevelt (Prog.)	23.1	1912

Popular Third Party Candidates

ELECT	CANDIDATE	POP%	YEAR
		08.0	1832
000	Anson Streeter (Union-Labor)	08.0	1888
	Eugene V. Debs (S)	06.0	1912
	Eugene W. Chafin (Prohibition)	01.7	1908
	J. Frank Lanly (Prohibition)	01.2	1916
	John Bidwell (Prohibition)	02.2	1892
	John St. John (Prohibition)	01.5	1884
	Silas C. Swallow (Prohibition)	01.9	1904
014	Daniel Webster (W)	02.7	1836
039	John Bell (Const. Union)	12.6	1860

Figure 6

Analyzing the Report

Go back to original problem stated. It asks you to determine the most popular third party candidate and to evaluate how many third party candidates won electoral votes.

Scan down the left-hand column of the reports. Which candidate received the most electoral votes?

Now look at Column 3. Did this candidate also receive the highest percentage of the votes?

Notice that although one candidate received 23.1 percent of the popular vote and 88 electoral votes, another candidate who won 21.1 percent of the popular vote only won eight electoral votes. Can you think of an explanation for this?

Does your report answer all of the questions you have? Do you need additional information, or an additional printout?

Finishing Up

Save your worksheet for planning reports. It may help you in the next activity.

ACTIVITY 7: ANALYZING PROBLEMS WITH REPORTS

The *Report* program enables you to do some interesting analyses of the *Election* data. This activity gives you additional examples of how to use the *Report* program to help you organize and analyze data.

What You'll Do

As before, you'll first consider a sample problem and define your information needs. You will use the *Report* program to do the necessary calculations and print out data from the *Election* file. Finally, you'll interpret the data from the report.

What You'll Need

For this activity, you'll need:

- A worksheet for planning reports (see page 48)
- An Apple *II*e or IIc computer
- A printer
- An *Election* data disk
- A *Report* program disk
- A *Sortwork* data disk

WORKSHEET FOR PLANNING REPORTS

Use this worksheet to plan a report from a *PFS* file using *PFS: Report*. After you answer the questions on this worksheet, take it to the computer and refer to it as you Pre-define a Report, set new headings, and then print the report.

Project or Student Name: ______________________________

Name of File: ______________________________

Defining Information Needs

What is the question or problem? ______________________________

____

What data item will be used to sort the report? ______________________________
(This data item will be in Column 1.)

What data item will go in each column? (For a Derived Column, write the formula.)

Column 1 ______________
Column 2 ______________
Column 3 ______________
Column 4 ______________
Column 5 ______________
Column 6 ______________

Pre-defining a Report

What will you name the Pre-defined Report (1–8 characters)? ______________

Setting New Headings

List the new headings you will set for the columns.

Data Item Name	New Heading

Printing the Report

1. Set up the Retrieve Spec. Which forms will be selected for reporting? ______________
____

2. Set up the Report Options. What title do you want printed at the top of each page of the report? ______________________________

Do you need to add linefeed characters for your printer (Y or N)? ______________

Planning the Report

In planning a report, you begin by carefully considering the question or problem you want to solve. If you don't understand the problem, you won't be able to decide what data to put in the report.

Considering the Problem

Using the *Election* file and *Report*, there are many different ways of retrieving data to study the following problem:

Problem: Halfway through a President's term in office, there is a Congressional election, known as the "off year" election. Would you expect to see the President's party gain or lose seats? The results of the off year election may tell us something about the President's popularity. Which Presidents have enjoyed an increase in the strength of their party in Congress during off year elections?

In all, you need six data items for this report. They are:

OFF-YEAR ELECTION OF CONGRESS (the year in which the off year election was held)
WINNER (The President who was elected in the Presidential election)
OFF-YEAR PRESIDENT (The President in office at the time of the Congressional election)
H-REP (number of Republicans in the House after the Presidential election)
OY-REP (number of Republicans in the House after the off year election)
CHANGE (A calculated item, which is the result of subtracting H-REP from OY-REP)

Deciding on Columns for the Data Items

What data item are you going to put in what column? This is important because *Report* sorts the report according to the data in Column 1.

HINT: If you put the CHANGE in Column 1, then you'll be able to spot quickly those Presidents whose party gained power in Congress while they were in office.

On your planning worksheet, write the data items to be printed in Columns 2, 3, and 4, and place H-REP in Column 5, and OY-REP in Column 6. Then write the formula that will be used to produce Column 1. The formula is #6–#5.

Column 1 will be a *Derived Column.* A Derived Column is a column of data that the *Report* program "makes up." Rather than getting the data directly from the file, the *Report* program performs certain calculations and puts the answers from the calculations into the Derived Column. In this case, the program is going to subtract the data in Column 5 from the data in Column 6, and put the answer in Column 1.

Completing the Planning Worksheet

There are a few more planning details you need to complete. Fill in the rest of the worksheet for planning reports. Give a name to your Pre-defined Report. List the new headings you will set for the columns. Tell what Retrieve Spec you are going to use. Write a title for the Report.

Setting Up the Report on the Computer

When your planning worksheet is complete, it is time to set up the Report on the computer.

Starting Up the Report Program

1. Load the *Report* program.
2. When the PFS: Report Menu appears on the screen, remove the *Report* program disk from the disk drive.
3. Insert the *Election* data disk in Drive 1.
4. Insert the *Sortwork* disk in Drive 2.

Pre-defining a Report

1. Select option 2 from the PFS: Report Menu.
2. Type the file name, *Election*. Press **CTRL-C**.
3. When the report name prompt appears, type your report name. The example uses OYREP. Then press **CTRL-C**. The blank report form will appear.
4. Press **TAB** until the cursor is beside WINNER. Type the column number.
5. Press **CTRL-N** until you get to Page 5 of the form.
6. Press **TAB** until the cursor is beside OFF-YEAR (OY) PRESIDENT. Type the column number.
7. Press **TAB** until the cursor is beside OFF-YEAR (OY) ELECTION OF CONGRESS. Type the column number.
8. Press **TAB** until the cursor is beside H-REP. Type *5*.
9. Press **TAB** until the cursor is beside OY-REP. Type *6*.
10. Press **CTRL-D** to get the Derived Columns screen.

Defining the Derived Column

You'll want the first column of the report to show the results of subtracting the number of House Republicans (H-REP) from the number of Off-Year House Republicans (OY-REP). You want this in Column 1, because you want the data to be sorted in order of the results of the subtraction. Recall that the *Report* program automatically sorts by the first column.

1. Type Gain/Loss for the column heading. Press **TAB**.
2. Type #6–#5. This is the formula for calculating this column. Then press **TAB**.
3. For the Report Spec, type *1*. This tells the program to put this Derived Column in Column 1.
4. Press **CTRL-C** to store the Report Spec. The PFS: Report Menu will appear.

Setting New Column Headings for the Report

Look at your planning sheet to see what new headings you had planned for your columns. Here's the procedure for setting new headings:

The PFS: Report Menu is on your screen.

1. Type *3* to select Set New Headings. The blank Headings form will appear.
2. Press **TAB** to move the cursor to WINNER. Type *President*.
3. Press **CTRL-N** until Page 5 of the form is on your screen.
4. Press **TAB** to move the cursor down to OFF-YEAR ELECTION OF CONGRESS. Type *Oy-Yr*.
5. Press **TAB** to move the cursor to OFF-YEAR PRESIDENT. Type *OY Pres*.
6. Press **CTRL-C** to store the new headings. The PFS: Report Menu will appear.

Printing the Report

Now you're ready to print the report. Make sure the printer is turned on and the paper is aligned in the printer.

1. From the PFS: Report Menu, type *1* to select Print a Report. Press **CTRL-C**. The blank Retrieve Spec will appear.
2. Refer to your planning worksheet. Find the Retrieve Spec you planned to use for this report. Type the Retrieve Spec.
3. Press **CTRL-C**. The Report Options screen will appear.
4. Type the title of your report. Press **TAB**.
5. Type your Pre-defined Report name.
6. If you need a linefeed for your printer, type *Y* for that option.
7. Press **CTRL-C**. The *Report* program begins selecting the forms for printing.

```
                        OFF YEAR HOUSE REPUBLICANS

Gain/Loss  President        OY PRES             OY-YR   H-REP  OY-REP
  120.00   Cleveland (D)    Cleveland (D)       1894    126    246
   80.00   Roosevelt (D)    Roosevelt (D)       1938     89    169
   66.00   Wilson (D)       Wilson (D)          1914    127    193
   56.00   Roosevelt (D)    H. Truman (D)       1946    190    246
   47.00   Johnson (D)      Johnson (D)         1966    140    187
   47.00   Roosevelt (D)    Roosevelt (D)       1942    162    209
   28.00   Truman (D)       Truman (D)          1950    171    199
   27.00   Wilson (D)       Wilson (D)          1918    210    237
   21.00   Buchanan (D)     Buchanan (D)        1858     92    113
   15.00   Carter (D)       Carter (D)          1978    143    158
   11.00   Cleveland (D)    Cleveland (D)       1886    140    151
    9.00   McKinley (R)     T. Roosevelt (R)    1902    198    207
    1.00   Kennedy (D)      Kennedy (D)         1962    175    176
   -2.00   Lincoln (R)      A. Johnson (R)      1866    145    143
   -3.00   Lincoln (R)      Lincoln (R)         1862    106    103
   -9.00   Hayes (R)        Hayes (R)           1878    137    128
  -10.00   Coolidge (R)     Coolidge (R)        1926    247    237
  -12.00   Nixon (R)        Nixon (R)           1970    192    180
  -14.00   Roosevelt (D)    Roosevelt (D)       1934    117    103
  -18.00   Eisenhower (R)   Eisenhower (R)      1954    221    203
  -21.00   McKinley (R)     McKinley (R)        1898    206    185
  -24.00   Reagan (R)       Reagan (R)          1982    190    166
  -28.00   Roosevelt (R)    Roosevelt (R)       1906    250    222
  -31.00   Grant (R)        Grant (R)           1870    170    139
  -33.00   Garfield (R)     C.A. Arthur (R)     1882    152    119
  -48.00   Eisenhower (R)   Eisenhower (R)      1958    201    153
  -48.00   Nixon (R)        Ford (R)            1974    192    144
  -49.00   Hoover (R)       Hoover (R)          1930    267    218
  -57.00   Taft (R)         Taft (R)            1910    219    162
  -75.00   Harding (R)      Harding (R)         1922    300    225
  -85.00   Harrison (R)     Harrison (R)        1890    173     88
  -96.00   Grant (R)        Grant (R)           1874    203    107
 -183.00   Reagan (R)                           1986    183
```

Figure 7

Debugging the Report

Does your report look the way you intended? It should look like Figure 7 on the previous page. If it doesn't, here are some tips on debugging.

1. Check to see if the columns are in the correct order. The column headings should be in this order:

   Gain/Loss   President   OY Press   Oy-Yr   H-Rep   Oy-Rep

   If your column headings aren't in the right order, go back to the procedure for Predefining the Report on page 50. Check over your Report Spec for the report, and make corrections as needed.

2. Look at the Column 1 results of the calculation. Check the arithmetic. If Column 1 is not the correct result of subtracting H-Rep from Oy-Rep, then you have set up the wrong formula for calculating the Derived Column. Go back to the procedure for Defining the Derived Column on page 51.

3. Check to see whether all six columns fit across the page. If they don't, you forgot to set new column headings for the report. Go back to the procedure for Setting New Column Headings on page 51.

4. Are some of your data incorrect? Look down the column for Oy-Rep. Does one of the values look wildly different from all the others? For example, is one of the values in the thousands, while all the others are in the hundreds? If so, your data file has an error in it. Bring this problem to your teacher's attention.

Interpreting the Report

Interpret the data on your report by answering the following questions:

- Which Presidents had an increase in number of House Republicans? Were these Democratic or Republican Presidents?

- Does it appear that Republicans usually gain or lose seats in the House during a Republican administration?

- If the off year Congressional election is an indication of the popularity of the President and his party, which Republican President would you say was the most popular?

- In how many instances was the off year President different from the winner? Do you think it affected the Congressional election?

Continuing the Research

Choose one or more of the following assignments:

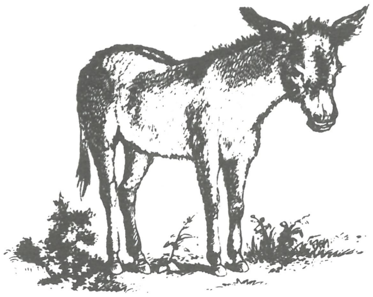
- Prepare a report that shows changes in the off year Senate elections.
- Prepare a report that shows changes in the number of Democratic seats in the House or Senate.
- Prepare a report that shows the difference between the number of Republicans and Democrats in Congress.

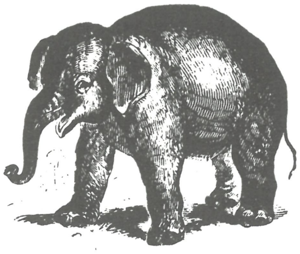
Analyze your reports to find out which Democratic Presidents had the greatest increase in opposition strength in the House during their administration.

What other sources of information could you use in order to study more closely the relationship between the President's party and the dominant party in the Congress? What factors might you look at to help explain these changes in the Congress?

Finishing Up

When you have finished working on the computer, finish up in the usual manner, putting the disks where they belong.





ACTIVITY 8: GRAPHING DATA

A graph is often a very useful way to display the kinds of data you have in a file. You can produce graphs of your data in either of two ways: you can print out selected data in the order needed, and then draw a graph by hand, or you can use the *Graph* program to draw a graph directly from the data in the *Election* file.

The only difference between these two methods is that after you know how to use the *Graph* program, it is much quicker to have the computer draw the graph than it is to draw it by hand.

What You'll Do

In this activity, you will learn how to prepare a graph using the *Graph* program. If you don't have the *Graph* program, you can create your own graph by hand.

What You'll Need

- An Apple *IIe* or IIc computer
- Two disk drives
- A printer that will print graphics
- A *Graph* program disk
- An *Election* data disk

Considering the Problem

The following is a problem that you'll use to define information needs and demonstrate the graphing of data from a file:

> Problem: Which party controls the House of Representatives? Study the pattern of Republican versus Democratic control of the House since 1920. What is the longest period of time any party has remained in control of the House?

Defining Your Information Needs

The problem is to show which party has controlled the House at which times since 1920. The first thing you need to do is decide what data items in the *Election* file can be useful to you in studying this problem.

Since there are two major political parties to be studied, it will be easiest to make a separate graph for each party. Begin with the Republicans.

- What data items from the *Election* file will be needed in order to analyze this problem?
- Which years should be selected in the Retrieve Spec?
- Which data item should be the x-axis of the graph? Which data item should be the y-axis of the graph?

HINT: If you want to see changes in House membership over time, it would be useful to have the years on the x-axis and the number of Republicans or Democrats on the y-axis.

You'll need to tell the *Graph* program that the x-axis data is to be numeric (N), so that *Graph* will sort the years in order from 1920 to 1980.

Getting Data From the File

Follow these steps to get the data from the *Election* file into the *Graph* program:

1. Start up the *Graph* program. The PFS: Graph Menu will appear on your screen.
2. Insert the *Election* data disk in Drive 2.
3. Type *1* to select GET/EDIT/DATA. Press **CTRL-C**. The GET/EDIT/DATA Menu will appear on the screen.
4. Type *3* to select Get PFS: *File*. Press **TAB**.
5. Select Graph: A. Press **CTRL-C**. A blank Retrieve Spec will appear on the screen.
6. Type your Retrieve Spec: YEAR > *1920*. Press **CTRL-C**. A blank Graph Spec will appear on the screen.
7. Type the x-axis spec YEAR: *XN*. (This tells the program that YEAR is the x-axis and that it is numeric data.)
8. Press **CRTL-N** until you get Page 4 of the form.
9. Type the y-axis spec H-REP: *Y*. This tells the program that H-REP will be the y-axis data. Press **CTRL-C**. The *Graph* program will begin reading the data from the file.
10. When the screen says "FORMS READ," you know the program has read the data successfully. Press **CTRL-C**.

Displaying and Debugging the Graph

Take a look at your graph by selecting 2 (Display Chart) from the GRAPH Menu.

It looks strange, doesn't it? All the data points are scrunched up in the 1900s on an x-axis that goes from zero to 2,000. Can you guess why?

You need to edit the data so that the data points will be spread out legibly on the graph.

Press **CTRL-C** to get back to the Graph Menu.

Editing the Data

Follow these steps to edit the data:

1. Type *1* to select GET/EDIT/DATA. Press **CTRL-C**. The GET/EDIT/DATA Menu will appear.
2. Select ENTER/EDIT/DATA by typing *1*. Press **TAB**.
3. Select Graph: A. Press **CTRL-C**. The data will appear on the screen.
4. Using the arrow keys and the **SPACE BAR**, erase the *19* from all the x-axis data. When you are finished, the x-axis data should include 24, 28, 32, and so forth, down to 80.
5. When you have finished editing the data, press **CTRL-C**. The screen should say Reading Data. Then the Graph Menu will appear.

Display the Chart Again

From the Graph Menu, select DISPLAY CHART by typing *2*. Press **CTRL-C**. The graph will appear on the screen.

It looks much better now, doesn't it?

Think about how to improve the presentation. First, notice the legend. This is not quite accurate, is it? It should say Republicans.

Also, the graph would be more understandable if it had a title as well as titles for the x-axis and y-axis.

Press **CTRL-C** to get the Graph Menu.

Adding Titles to the Chart

The Graph Menu is on your screen.

1. Select DEFINE CHART by typing *3*. Press **CTRL-C**. The Define Chart Menu will appear.
2. Press **TAB** to move the cursor to the Legend, and type *Republicans*.
3. Press **TAB** to move the cursor to the CHART TITLE, and type *House of Representatives*.
4. Press **TAB** to move the cursor to X-AXIS TITLE, and type *Year*.
5. Press **TAB** to move the cursor to Y-AXIS TITLE, and type *# Representatives*.
6. Press **CTRL-C** to store the titles. The PFS: Graph Menu will appear on the screen.

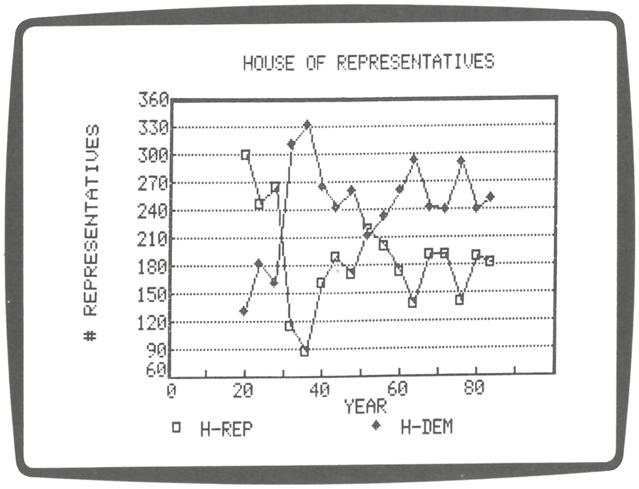


Figure 8

Displaying the Chart With Titles

Display the chart again. How does it look now? Is it neat and clear?

Compare your chart to Figure 8. If they don't look the same, you still have some debugging to do.

Adding the Democrats to the Chart

Repeat the same process to add the data for the Democratic Representatives to the chart. On the GET/EDIT/DATA Menu, select Chart B. Then get the data for the Democrats (H-Dem) from the *Election* file. As before, you need to edit that data to remove the 19 from in front of all the years.

After you have prepared Chart B, display the chart. Does it now show both the Republicans and the Democrats?

Printing the Chart

If your chart looks good, you can print it now. If you don't have the time or a printer to print it right away, use the chart in Figure 9 on page 60 to interpret the data.

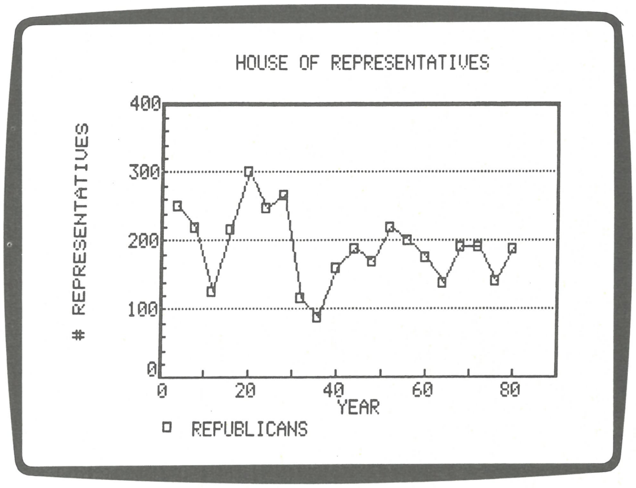

HOUSE OF REPRESENTATIVES
# REPRESENTATIVES
400
300
200
100
0
0
20
40
60
80
YEAR
□ REPUBLICANS

Figure 9

The procedure for printing the chart is:

1. From the Graph Menu, select Print/Plot by typing *6*. Press **CTRL-C**. The PRINT/PLOT Menu will appear.
2. From the PRINT/PLOT Menu, type *1* if you have a printer, and *2* if you have a plotter. Then press **CTRL-C**. The PRINT Menu appears on the screen. If you don't know what kind of printer you have, you can keep trying different printer selections until you find one that works.
3. Make sure that the printer is turned on and the paper is aligned in the printer.
4. Press **CTRL-C** to start the printer.

If all goes well, you should have a descriptive graph printed out. If not, you and your teacher may have to do some experimenting with the PRINT Menu to find out which choice works for you.

Interpreting the Graph

It should be easy to answer the questions posed at the beginning of this activity, now that you have a graph of the data.

- Which party controlled the House in 1980?
- What is the longest period of time any party has remained in control of the House? Which party?

On Your Own

Produce a graph showing which party controlled the Senate since 1920. Based on what you know about the House of Representatives, would you expect the Senate to be controlled by the Democrats or Republicans during most of the twentieth century?

Produce a graph showing trends in the number of eligible voters, and in the percent of voters voting. Do you see any relationship between percent voting and the election results?

Finishing Up

End your session on the computer in the usual manner. Put the disks away where they belong.

ACTIVITY 9: PROBLEMS AND PROJECTS

Working with a partner, select a project to work on using the *Election* data. Follow the steps you have been using throughout these activities. Remember to do these things:

1. Consider and describe the problem. If necessary, break the problem into subproblems.
2. Define information needs.
3. Decide whether to use the *File*, *Report*, or *Graph* program to retrieve and print the data.
4. Define the Print Spec, Report Spec, or Graph Spec needed to present the data.
5. Test and debug the printout, report, or graph.
6. Print the data using *File*, *Report*, or *Graph*.
7. Interpret the data.

The following is a list of possible projects; there is also a list in the introduction to this *Election* activities unit. Your teacher may suggest others.

- Trace the development of third parties in American Presidential elections. What platforms did these parties stand for? Were any third parties formed around a single issue? Who were their candidates? Did their running make a difference in the outcome of the election? What was the most successful third party, in terms of percentage of popular vote obtained?
- During which years did the House or Senate increase in membership? Why did this happen?
- Analyze the five amendments to the Constitution that have affected Americans' right to vote (Amendments Fourteen, Fifteen, Nineteen, Twenty-Four, and Twenty-Six). Did they have an impact on voter participation?
- Work on a political campaign. Share your knowledge about who are the most- and least-likely-to-vote groups. Target your campaign efforts to that population.
- Compare American voter participation with that of other countries.

Scholastic pfs®: U.S. Government Data Bases

State Government

STATE GOVERNMENT: LESSON PLANS

Overview

The activities in this unit teach students how to create a data file that has already been designed. The file will contain data about the political structure and laws of the states in the United States.

Building such a file is a class project. You will have to divide the class into pairs of students, and assign each pair the responsibility of gathering certain types of data. For example, each student pair might be assigned two states, or each student pair might gather one or two types of data for all of the states—laws on drinking and driving, for example.

Key Topic Areas in American Government

The major topics covered are Laws, Current Events, and State Government.

Description of File Contents and Organization

Figure A on page 5 shows the file design. It also appears in the students' activities unit. You should feel free to alter the design to tailor it to your curriculum needs.

The form design is named *Stategov*. The form on the disk is four pages (screens) long. Each form contains information about one state.

Page 1

The first page identifies the STATE. It contains information about the state and the EXECUTIVE, LEGISLATIVE, and JUDICIAL branches of the state government.

Page 2

Page 2 contains state laws. The title of the page is THE AGE OF MAJORITY FOR SPECIFIC ACTIVITIES. For each state, the laws at which age you can VOTE, MARRY, DRIVE, MAKE A WILL, LEAVE SCHOOL, OPEN AN ACCOUNT AT THE BANK, and TAKE A CASE TO SMALL CLAIMS COURT are presented in the file.

Page 3

Page 3 of the form includes data items on CRIME AND JUSTICE. Information about the CRIME RATE and PRISON POPULATION is recorded for each state.

Page 4

On Page 4, the references used to compile the data on the previous pages are listed.

Grade Level Suggestions

This unit is suitable for students in fifth grade and above. The data needed to construct the file are readily available in the school library.

Hardware Needed

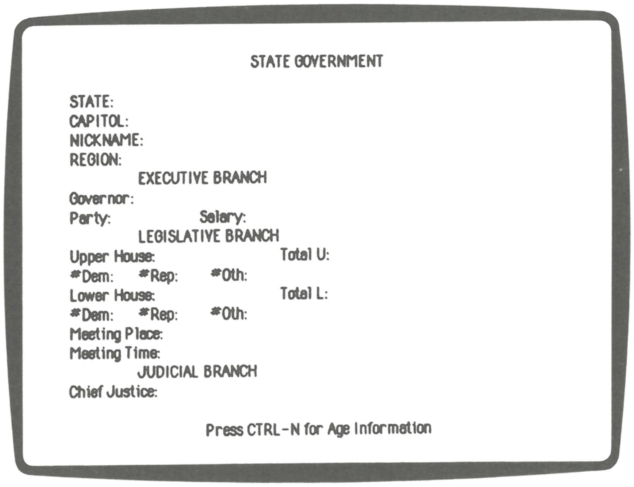
Each activity tells what equipment and software is needed. Most activities require an Apple *II*e or IIc computer, one disk drive, a monitor, and a printer. No equipment is needed for Activities 2 and 3, and Activities 4, 5, and 7 do not require a printer.

Classroom Management

Before each activity, make copies of the print materials and distribute them to students. Then refer to the activity-by-activity lesson plans, beginning on page 6. These are in chart form. They will tell you the major objectives for each activity, how much time to allot for each, and how to prepare for and manage each one.

Disk Management

If each student pair is entering data on different disks, you could end up with 10 or 15 disks. You will want to combine the forms contained in these data disks into one file. To do this, use the COPY function from the PFS: File Function Menu. Copy the specific forms, not the entire disk, using the Copy Selected Forms option. You may want to ask students to label their disks with the names of the states they researched, so you know which forms to select for copying.

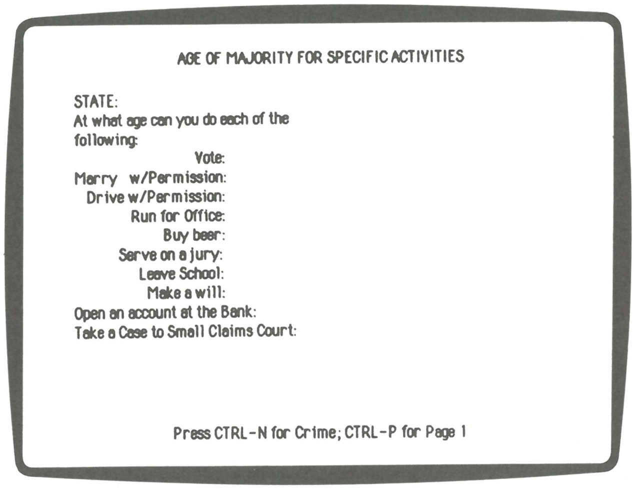


```
                    STATE GOVERNMENT

STATE:
CAPITOL:
NICKNAME:
REGION:
       EXECUTIVE BRANCH
Governor:
Party:            Salary:
       LEGISLATIVE BRANCH
Upper House:                Total U:
#Dem:    #Rep:    #Oth:
Lower House:                Total L:
#Dem:    #Rep:    #Oth:
Meeting Place:
Meeting Time:
       JUDICIAL BRANCH
Chief Justice:

             Press CTRL-N for Age Information
```

Page 1



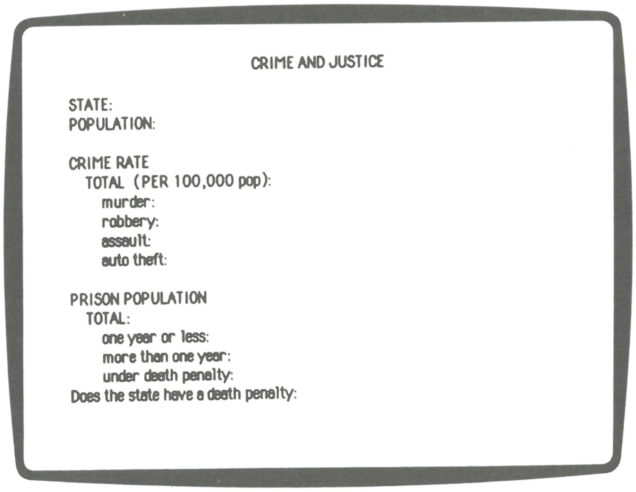
```
        AGE OF MAJORITY FOR SPECIFIC ACTIVITIES

STATE:
At what age can you do each of the
following:
              Vote:
Marry  w/Permission:
 Drive w/Permission:
     Run for Office:
           Buy beer:
     Serve on a jury:
       Leave School:
        Make a will:
Open an account at the Bank:
Take a Case to Small Claims Court:



        Press CTRL-N for Crime; CTRL-P for Page 1
```

Page 2



```
                   CRIME AND JUSTICE

STATE:
POPULATION:

CRIME RATE
  TOTAL  (PER 100,000 pop):
    murder:
    robbery:
    assault:
    auto theft:

PRISON POPULATION
  TOTAL:
    one year or less:
    more than one year:
    under death penalty:
Does the state have a death penalty:
```

Page 3

Figure A

State Government
Activity-by-Activity Lesson Plans

Activity	Objectives	Preparation	Management	Time (per student)
1.	• Brainstorm ideas about state governments. • Locate sources of social and historical information. • Identify data needed to answer questions. • Use library references. • Print blank forms.	• Prepare a list of ideas for research projects to discuss with your class. • Use the DESIGN function of *File* to create the state file design on disk. Make copies for each student pair.	• Introduce the project and activity to the class. • Schedule time on the computer for student pairs.	35 minutes
2.	• Gather and organize information from a variety of historical sources. • Organize and collect data.	• Arrange for students to use school or community library, or have reference sources available in the classroom.	• Assist students in locating sources of information. • Assist students in selecting events to describe. • Assist students in writing short summaries of the file. • Collect the filled-in data forms for use in the next activity.	Depends on complexity of project. Some research may be assigned for homework.
3.	• Validate accuracy of data collected.	• Hand out the filled-in data collection forms to students to check for accuracy. Make sure each student pair receives a form other than the one they themselves filled out.	• Review with students the guidelines for checking the data forms as discussed in the activity. • Collect the checked forms when the students are finished.	Depends on the amount of data gathered and how. May be assigned as homework.
4.	• Enter data into a computerized data base. • Add new forms to the file.	• Copy the *Stategov* file from the master disk onto the working disks. • Set up the printer.	• Hand out the checked data forms. • Schedule time on computer for student pairs.	45 minutes, depending on number of data forms each student pair is to enter.

(Continued on next page.)

State Government
Activity-by-Activity Lesson Plans

Activity	Objectives	Preparation	Management	Time (per student)
5.	• Define a historical or social problem and the information needed to answer it. • Organize data collected. • Plan printout.	• Copy the *Stategov* file from the master disk onto the working disks.	• Schedule time on computer for student pairs. • Help students choose their projects.	35 minutes
6.	• Analyze and interpret printout. • Determine whether additional information is needed. • Print using a Pre-defined Print Spec.	• Give student pairs the *Stategov* file disk that has their Pre-defined Print Spec. • Schedule time on computer for student pairs. • Set up the printer.	• Help students to interpret data and to decide what further information would help them answer their original questions. • Display student printouts on the wall so students can learn from each other's work.	35 minutes
7.	• Update and validate data on file. • Collect data to be entered.	• Copy the *Stategov* file from the master disk onto the working disks. • Set up the printer.	• Schedule time on computer for student pairs. • Help students manage the data disks.	Depends on amount of data gathering and file updating to be done.
8.	• Determine a social or historical problem and the data needed to solve it. • Organize and analyze data. • Synthesize information and draw conclusions. • Plan, print, and interpret printout.	• Copy the *Stategov* file from the master disk onto the working disks. • Provide students with copies of worksheet for planning printouts. • Set up the printer.	• Schedule time on computer for student pairs. • Help students choose their projects. • Help students debug their printouts.	45 minutes

INTRODUCTION

This series of activities will help you to learn the following:

- how to create and use computer data files.
- some facts about state governments.

The skills you develop in creating and using data files will be useful to you not only in your school work, but in organizing information on any subject that is important to you, such as your record album collection, personal address book, club members and club activity schedules, or paper route customers.

The knowledge you gain about state government, and the file of data you create, will help you study questions such as these:

- What do the states have in common? Do they all have a two-part legislature? Do they all pay their governors the same salary?
- What are the differences among states regarding the age at which a person can get a driver's license? Get married? Stop attending school?
- Do the states within particular regions have similar laws? Do the various regions of the United States have different state laws?
- Which states have a death penalty for certain crimes? Does this vary by region? Which state has the largest prison population?
- Do most states have Republican or Democratic governors? Legislatures?
- When is your state legislature in session? How many representatives are there in your legislature? Are they mostly Democrats or Republicans?

Activities in This Unit

This series of eight activities shows you how to create and use a file of data on state governments. Complete the activities in order.

Activity 1: Preparing to Gather Data
Activity 2: Gathering Data on Printed Forms
Activity 3: Checking the Accuracy of the Data
Activity 4: Adding New Forms to the *Stategov* File
Activity 5: Planning Printouts from the *Stategov* File
Activity 6: Making the Printout
Activity 7: Updating the *Stategov* File
Activity 8: Using the *Stategov* File

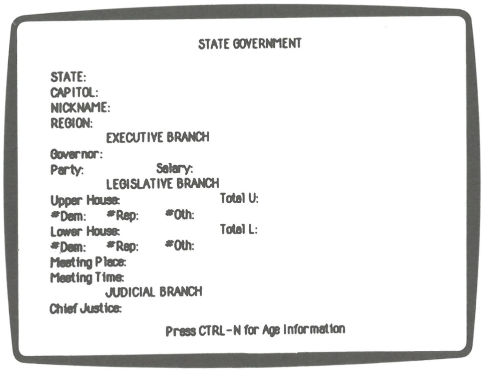
ACTIVITY 1: PREPARING TO GATHER DATA

What You'll Do

First, your class will plan the research needed to create the file. Then, you and your partner will use the *File* program on your computer to print out blank data forms from the *Stategov* file. Finally, you'll prepare to gather data about state governments from any available sources.

What You'll Need

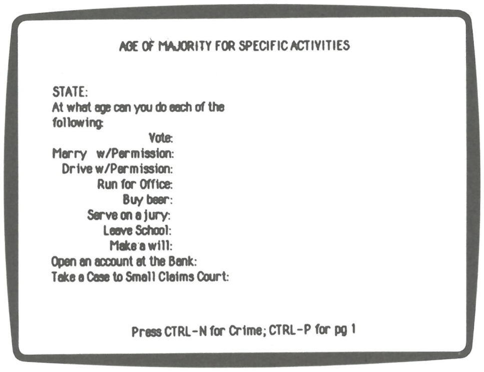
- A *File* data disk called *Stategov*
- A *File* program disk
- An Apple *IIe* or IIc computer
- A printer



```
                 STATE GOVERNMENT

STATE:
CAPITOL:
NICKNAME:
REGION:
        EXECUTIVE BRANCH
Governor:
Party:          Salary:
        LEGISLATIVE BRANCH
Upper House:              Total U:
#Dem:   #Rep:    #Oth:
Lower House:              Total L:
#Dem:   #Rep:    #Oth:
Meeting Place:
Meeting Time:
        JUDICIAL BRANCH
Chief Justice:
             Press CTRL-N for Age Information
```

Page 1

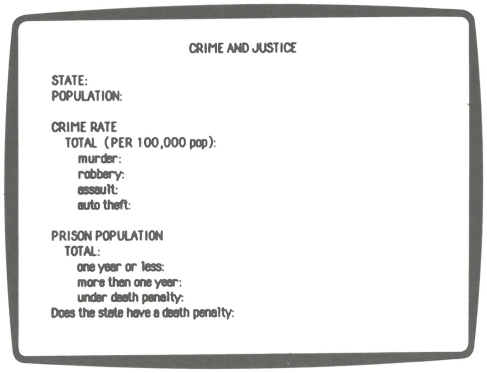


```
        AGE OF MAJORITY FOR SPECIFIC ACTIVITIES

STATE:
At what age can you do each of the
following:
                   Vote:
Marry  w/Permission:
  Drive w/Permission:
         Run for Office:
               Buy beer:
       Serve on a jury:
          Leave School:
            Make a will:
Open an account at the Bank:
Take a Case to Small Claims Court:

             Press CTRL-N for Crime; CTRL-P for pg 1
```

Page 2



```
                CRIME AND JUSTICE

STATE:
POPULATION:

CRIME RATE
  TOTAL (PER 100,000 pop):
    murder:
    robbery:
    assault:
    auto theft:

PRISON POPULATION
  TOTAL:
    one year or less:
    more than one year:
    under death penalty:
Does the state have a death penalty:
```

Page 3

Figure 1

Figure 1 shows a blank data form designed for gathering data. You will use this form to collect data for the *Stategov* file.

Planning the Research

Your teacher will lead a discussion about the kinds of information your class will gather. Look at the *Stategov* form in Figure 1. Your class may decide only to gather some of the data items shown on that form.

Deciding on a List of Questions

It's important for you and your classmates to be clear about what questions you want to be able to answer with your data file. You need to make your own class list of questions similar to the questions listed in the introduction to this unit. Then, for each question you want to answer, identify which data items will be needed in the file in order to answer that question. For example, if you want to be able to find out which states have Republican governors, then you will need to fill in PARTY for all state governors.

Deciding on Rules for Gathering Data

The file will only be useful if everyone follows the same rules in gathering the information. For example, there are different ways of classifying states by region. What words will your class use to describe each geographical region in the United States?

There are different possible ways of writing a person's name. You might, for instance, write the governor's name as last name, first name, or you might write it as first name, and then last name. It's important that names always be written in the same manner. How will your class write the governor's name?

There is not enough room on the *Stategov* form to write the entire phrase *House of Representatives* beside LOWER HOUSE. Your class must agree upon a standard way of abbreviating this, such as *H. of Rep.*

Deciding Who Will Gather What Information

The easiest way to divide up the work is by state. There are fifty states. If you have ten pairs of students in your class, each partnership will gather information for five of the states.

Another way to divide up the work is by topic. For example, you and your partner might gather information on the Executive Branch for all fifty states. Another pair of students might gather all the data about crime and justice for all fifty states.

Printing Out Your Blank Data Forms

Before you print out your blank data forms, decide how many copies you'll need. You should make twice as many blank forms as you think you will need. (Some may get messy and you'll have to copy the data over again on a clean form.) The number of forms you will need will depend on the method you have chosen for gathering data, and the number of states you will gather data for.

Next, follow the procedure below to make copies of the blank data forms.

Starting Up the File Program

The following is the standard procedure for starting up the *File* program. Remember this procedure and use it each time you start up *File*.

1. Remove the *File* program disk from its protective jacket and insert it in Drive 1 of the computer. (On the Apple IIc, this is the built-in drive.)

2. If the computer is turned off, turn it on. If the computer is already on, press three keys all at once: **CTRL**, **OPEN APPLE**, and **RESET**.

3. The PFS: File Function Menu will appear on the screen.

4. Remove the *File* program disk from Drive 1 and put it back in its protective jacket. You won't need it any more for this session on the computer.

5. Insert the *Stategov* data disk in Drive 1.

Printing Blank Data Forms

The PFS: File Function Menu is on the screen and the *Stategov* data disk is in Drive 1.

1. Turn the printer on and adjust the paper so that the top of a page of paper is under the print head.

2. Select the ADD function by typing *2*. Press **TAB** to move the cursor to FILE NAME. Type *Stategov* for the FILE NAME, and then press **CTRL-C**. The *Stategov* form will appear.

3. Press **CTRL-O**. (Be sure to press the letter O, and not zero. It stands for "output.") The Print Options Menu will appear.

4. Press **TAB** to move the cursor to ADD LINEFEED CHARACTERS (Y/N). Type *Y* for "yes."

5. Press **TAB** to move the cursor to LINES PER PAGE. Type *22*.

6. Press **TAB** to move the cursor to NUMBER OF COPIES. Type the number of copies you will need.

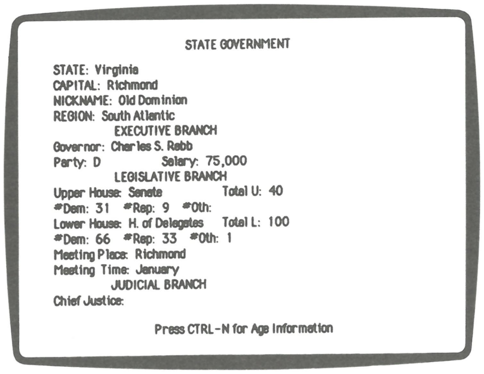
7. Press **CTRL-C**. Your printer should begin printing out your blank forms.

8. When printing is complete, press **ESC** to return to the PFS: File Function Menu.

Follow the standard procedure for ending the session on the computer.

Finding and Listing Your References

Figure 2 shows a sample filled-in form for Virginia.

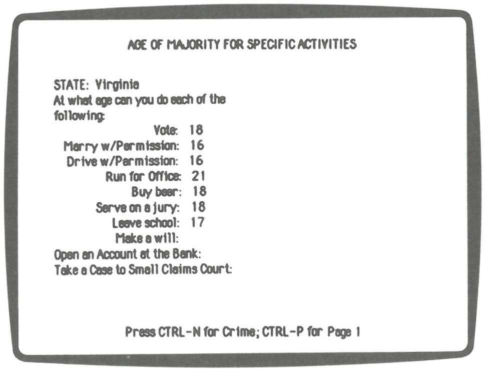


```
                STATE GOVERNMENT

STATE: Virginia
CAPITAL: Richmond
NICKNAME: Old Dominion
REGION: South Atlantic
        EXECUTIVE BRANCH
Governor: Charles S. Robb
Party: D           Salary: 75,000
        LEGISLATIVE BRANCH
Upper House: Senate          Total U: 40
#Dem: 31  #Rep: 9  #Oth:
Lower House: H. of Delegates   Total L: 100
#Dem: 66  #Rep: 33  #Oth: 1
Meeting Place: Richmond
Meeting Time: January
        JUDICIAL BRANCH
Chief Justice:

       Press CTRL-N for Age Information
```

Page 1

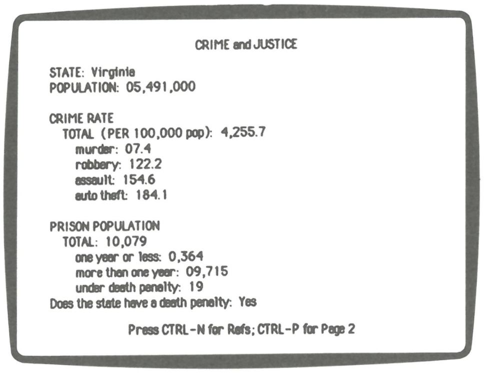


```
      AGE OF MAJORITY FOR SPECIFIC ACTIVITIES

STATE: Virginia
At what age can you do each of the
following:
                     Vote:  18
     Marry w/Permission:  16
      Drive w/Permission:  16
           Run for Office:  21
                 Buy beer:  18
          Serve on a jury:  18
            Leave school:  17
              Make a will:
Open an Account at the Bank:
Take a Case to Small Claims Court:

     Press CTRL-N for Crime; CTRL-P for Page 1
```

Page 2



```
                CRIME and JUSTICE

STATE: Virginia
POPULATION: 05,491,000

CRIME RATE
  TOTAL (PER 100,000 pop): 4,255.7
    murder: 07.4
    robbery: 122.2
    assault: 154.6
    auto theft: 184.1

PRISON POPULATION
  TOTAL: 10,079
    one year or less: 0,364
    more than one year: 09,715
    under death penalty: 19
Does the state have a death penalty: Yes

      Press CTRL-N for Refs; CTRL-P for Page 2
```

Page 3

Figure 2

Fill in the state on the top of each of your blank forms, using one form for each state you will be working on.

Where will you get the data for your *Stategov* file? You will need almanacs and similar reference books. Another good source of information for this topic is the *Reader's Digest Family Legal Guide*, published and updated annually by West Publishing Co.

Go to the library with your partner. Take your blank forms with you. Look at various reference materials and talk to the librarian about any other reference materials you might use.

Finishing Up

Discuss with your partner how you will divide the gathering and recording of data. If you have time now, go to the next activity.

ACTIVITY 2: GATHERING DATA ON PRINTED FORMS

Now that you have your data collection forms and know which sources to use, you're ready to gather data.

What You'll Do

You and your partner will fill in the data on your printed forms (blank data forms) for all the states or topics you are responsible for.

What You'll Need

- Your printed data forms
- Pencils
- Reference materials

Gathering Data on Printed Forms

Take your printed forms to the library. Use the reference materials you've already located to look up information on the state and topics you're working on. Use a pencil to fill in the data. On each form, be sure to write down the references used and include page numbers.

Here are some things to be aware of when filling out the forms:

- Make sure you use the words agreed upon by your class. If your reference uses different words for regions than those agreed upon in class, resolve this problem with your teacher before proceeding.
- Use the agreed-upon style for writing the governors' names (last name, first name or first name, last name).
- Use the agreed-upon style for abbreviating the name of the Lower House in the Legislative Branch.
- Use the normally accepted standard of "per 100,000 population" when writing down the crime rate for various crimes. (If a statistic for crime in a certain state is 20,000, you would write 020,000).
- Be sure to write your sources of information on Page 4 of the form.
- You may not be able to find data for every data item on the form. That's okay. Fill in as much as you can.

Finishing Up

When you have filled in the data on your forms, turn them in to another student to use in the next activity.

ACTIVITY 3: CHECKING ACCURACY OF DATA

TODAY IS
MONDAY
5

If you have ever used computerized data files to retrieve information, you know how important it is for data to be accurate. It's impossible to retrieve information if it's not in the right format and spelled correctly. For example, suppose a classmate had spelled "Virginia" as "Verginia." You'd have a terrible time finding that form.

What You'll Do

You will check the accuracy of the data forms prepared by your classmates, and correct mistakes or misspellings.

What You'll Need

- Printed data forms for *Stategov*, filled in by your classmates. Your teacher will give these to you.

Checking the Accuracy of the Data

Here are some guidelines for checking the data forms:

- First, make sure each form has the REFERENCES listed. If it doesn't, you won't know where your classmates got their data. This should include both the book and a page number. If this information was not filled in, give the paper forms back to your teacher to return to the students who worked on them.

- Next, check the format of the data. Is everything entered in the correct format? For example, is the governor's name written in the correct form? If not, rewrite it in the proper format.

- Now look up the information in the reference books listed. Make sure the information is accurate. Make corrections as needed.

- When you have finished checking and correcting a form, write your name on the bottom of the page.

Finishing Up

When you have finished checking and correcting all of the forms, turn them in to your teacher.

ACTIVITY 4: ADDING NEW FORMS TO THE STATEGOV FILE

Now that you have a collection of information about state government on printed forms, corrected and ready to use, it's time to store the data on the file disk.

What You'll Do

In this activity, you and your partner will work together to type data into the *Stategov* file.

What You'll Need

- A set of printed forms filled in by classmates (not you and your partner) and checked by another pair of classmates (not you and your partner)
- A *File* program disk
- A *Stategov* data disk
- An Apple *II*e or IIc computer

Entering Data

How you enter the data will depend on how the data were collected in the first place. If you collected data on all of the topics for particular states, you can use Method 1: Adding Forms. If you collected data for one topic for all of the states, you can use Method 2: Updating Forms. Both of these methods are explained in this activity.

Decide with your partner how you will work together to enter the data. One person can work on the keyboard while the other reads the instructions and data. You can take turns doing this.

Method 1: Adding Forms

If you and your partner collected all or most of the data items for certain states, use this method to enter your data into the *Stategov* file.

Start up *File* in the usual manner. Put the *Stategov* data disk in Drive 1. The PFS: File Function Menu is on the screen.

1. Select ADD by typing *2*.

2. Press **TAB** to move the cursor to FILE NAME.

3. Type *Stategov*, and then press **CTRL-C**. A blank form will appear on the screen.

CAUTION: Do not remove the disk from the disk drive or turn the computer off unless the PFS: File Function Menu is on the screen. Removing the disk while using the ADD function may result in damage to the file.

4. Now type the data for your first state. One partner can read the data from the printed form out loud, while the other partner types the data.

5. Both partners should proofread the data on the screen. If you see a mistake, the **TAB** and **APPLE-TAB** keys will move the cursor back and forth between the data items. The **ARROW** keys will move the cursor within a data item. Mistakes can be corrected by typing over the information you no longer want.

6. If you make a lot of mistakes and want to start all over again, press **ESC**. This will take you back to the PFS: File Function Menu without storing the form that has the mistakes.

7. To get to the next page of the form, press **CTRL-N**. To return to a previous page of the form, press **CTRL-P**.

8. When you and your partner agree that the data on the form are accurate, press **CTRL-C** to store the form. You may want to make a mark on your data collection form to show that the data has been entered into the computer.

9. The next blank form should now be on your screen. Enter the data for the next state you are working on. Continue the procedure explained above until you have entered the data for all of your states.

10. When a blank form appears and you do not have any more states to add, press **ESC**. The PFS: File Function Menu appears.

When you are finished entering your data, proceed to the activity called Testing the File on page 19.

Method 2: Updating Forms

If the data were collected on just one topic for all of the states, use this method to enter your data into the *Stategov* file.

Make sure that someone has already added a form to the file for each state, and typed the STATE data item for each of the 50 states. If this has not been done, someone must prepare the file for the class by using the ADD function of the *File* program to create a form for each state.

Start up the *File* program in the usual manner. The PFS: File Function Menu is on your screen and the *Stategov* data disk is in Drive 1.

1. Select SEARCH/UPDATE by typing *4*. Press **CTRL-C**. The blank Retrieve Spec form for *Stategov* will appear on the screen.

2. Leave the Retrieve Spec blank. Press **CTRL-C**.

3. When a data form appears, look at the STATE data item. This is the form you will start updating.

4. Press **TAB** until the cursor is on the data item you want to enter. If your data item is on Page 2 of the form, press **CTRL-N** to get Page 2.

5. Type your data. If you make an error, use the **DELETE** key to erase backwards. Then type the correct data. If you make a lot of mistakes and want to start over, press **ESC**.

6. Make sure all of the information you have typed is correct.

7. When you are sure that you have typed all of the correct information onto the correct state form, press **CTRL-C** to store the data. The form for the next state appears on the screen. You may want to mark your data collection form to show that the data has been entered into the computer.

8. Continue updating forms until you have entered all of your data. When you press **ESC** for the last time, a message will appear on the screen telling you how many forms have been updated.

9. Press **CTRL-C**. The PFS: File Function Menu will appear.

Testing the File

Now that you have entered your data into the file, perform a little test to make sure that your data have been stored in the way you intended.

The PFS: File Function Menu is on your screen and the *Stategov* data disk is in Drive 1.

1. Look at your data collection sheets and choose one of the states.
2. Select the SEARCH/UPDATE function by typing *4*.
3. Press **CTRL-C**. The blank Retrieve Spec form will appear.
4. Type the name of the state you chose in Step 1, above.
5. Press **CTRL-C**. The form for that state will appear on the screen.
6. Look at the data you entered for that state. Is it correct? Check it against your printed form. Correct any mistakes.
7. When you are finished checking, press **CTRL-C**.

Check a few more of your states. When you are sure that the data have been entered correctly, end the activity.

Finishing Up

The PFS: File Function Menu is on your screen. Remove the *Stategov* disk from the disk drive and put the disk in its protective jacket.

CAUTION: Never remove the disk from the disk drive or turn the computer off unless the PFS: File Function Menu is on the screen.

Turn the computer off, unless someone is waiting to use the same program. Put the program disks where your teacher has instructed you to keep them.

ACTIVITY 5: PLANNING PRINTOUTS FROM THE STATEGOV FILE

Now that you and your classmates have typed and stored data for all the states, you can use the *Stategov* file to get information in all kinds of interesting ways.

What You'll Do

You and your partner will plan a printout from the file and define a Print Spec.

Your creative challenge is to define a question or problem that is interesting to you, and produce a printout that is useful in answering that question or problem.

What You'll Need

Before you continue, make sure that the teacher or someone else has made a backup copy of the *Stategov* data disk containing the data forms for all the states.

You will need:

- A worksheet for planning printouts (see page 21)
- A printed copy of the *Stategov* data form (either blank or with data written on it)
- A *File* program disk
- A *Stategov* data disk
- An Apple *IIe* or IIc computer

WORKSHEET FOR PLANNING PRINTOUTS

Use this worksheet to plan printouts of data from a *PFS* file. After you answer the questions on this worksheet, take it to the computer and refer to it as you set up the Pre-defined Print Spec and then print the data.

Project or Student Name: ______________________________

Name of File: ______________________________

Defining Information Needs

What is the question or problem? ______________________________

____

____

What data items will be included on the printout? ______________________________

____

____

____

Which data item will be used for sorting the printout? ______________________________

Setting Up a Pre-defined Print Spec

What will you name the Pre-defined Print Spec (1–8 characters)? ______________________________

Printing the Data

1. Set up the Retrieve Spec. Which forms will be selected for printing? ______________________________

____

2. Set up the Print Options. Will you print the item names (Y or N)? ______________________________

Do you need to add linefeed characters for your printer (Y or N)? ______________________________

How many lines do you need to print from each form page? ______________________________
Use this number in the Lines Per Page option.

Defining Your Problem

Look at the list of questions in the introduction to this unit. Which question do you find interesting? Discuss with your partner which question or problem you want to work on. You don't have to use one from the list, but the list may suggest some ideas to you.

What question will you and your partner try to answer about state government? Write your question on the planning worksheet.

Planning Your Printout

What information from the *Stategov* file will be useful to you in answering your question?

You and your partner should have in front of you a printed copy of the *Stategov* data form. Discuss with your partner what you want your printout to look like. Figure 3 shows examples of different printouts students have obtained from their *Stategov* file.

```
STATE GOVERNMENT
STATE: Connecticut    Run for Office: 21

STATE GOVERNMENT
STATE: Alaska    Run for Office: 21

STATE GOVERNMENT
STATE: Alabama    Run for Office: 21

STATE GOVERNMENT
STATE: Missouri    Run for Office: 24

STATE GOVERNMENT
STATE: Kentucky    Run for Office: 24
```

```
Vermont    New England
Rhode Island    New England
N. Hampshire    New England
Massachusetts    New England
Maine    New England
Connecticut    New England
Washington    Pacific
Oregon    Pacific
Hawaii    Pacific
California    Pacific
Alaska    Pacific
W. Virginia    South Atlantic
Virginia    South Atlantic
S. Carolina    South Atlantic
```

Figure 3

Here are some questions to discuss:

1. Which data items do you want to appear on the printout? For example, if your question is "What state pays their governor the highest salary?" you might print just the governor's name, party, and salary. If your question relates to regional differences among states regarding the age at which a person can drive, you would want the data items STATE, REGION, and DRIVE W/PERMISSION.

   On your planning worksheet, write a list of the data items you want to include in your printout.

2. In what order do you want the forms to be printed? Think about this carefully. For example, if you are interested in which governors have the highest salary, you would want to sort by SALARY. In this way, the governor with the highest salary will be printed last, so it will be easy to find. Or, if you are looking for regional differences among states regarding the legal driving age, you might want to sort by REGION. In this way, all the states for a given region will be grouped together on the printout.

   Write on your planning worksheet the data item you will use for sorting forms for the printout.

3. Write on your planning worksheet the Retrieve Specs you will use to select the forms for printing. For example, if you want to select only the states in the South Atlantic region, your Retrieve Spec would be REGION: *south atlantic*. If you want data only for Republican governors, your Retrieve Spec would be PARTY: *R*. If you only want information on the states where the driving age is less than 16, you would use the Retrieve Spec DRIVE W/PERMISSION: *>16*.

4. You'll need to use a special procedure to set up your printout with the correct spacing. There are two major considerations:

   A. Each form in the file has three pages of data. Will your printout include data items from just one of those pages? Two of the pages? Or all three?

   B. How many lines will be printed from each of the three pages of the form (depending on which data items you will be printing)?

   Here's a formula for setting up your printout with the correct spacing:

   Write the number of lines you think will be printed from each page of the data form:

   Number of lines from Page 1 of the form: ____________

   Number of lines from Page 2 of the form: ____________

   Number of lines from Page 3 of the form: ____________

   C. Add 3 to the largest number above: ____________

   D. Does this number divide equally into 66? ____________

   E. If it does, then this is the number of LINES PER PAGE you will enter in the Print Options Menu. Write that number on your planning worksheet.
   Number for Lines Per Page: ____________

   F. If it doesn't, figure out the next largest number that divides equally into 66. For example, if the number in Step 2 is 9, the next largest number that divides equally into 66 is 11.
   Number for Lines Per Page: ____________

5. What name will you give your Pre-defined Print Spec? Remember, the name must be eight characters or less, and should be one that you can identify easily. You might use your own last name. Better yet, give the Pre-defined Print Spec a name that has something to do with your printout. For example, a printout of the ages for driving might be called DRIVING.

   Write on your planning worksheet the name you will give to your Pre-defined Print Spec.

Defining Your Print Spec

Now you and your partner are ready to take your planning worksheet to the computer and define your Print Spec. Here's the procedure:

Start up the *File* program as usual. Put the *Stategov* data disk in Drive 1. The PFS: File Function Menu is on the screen.

1. Select PRINT by typing *5*, and then press **CTRL-C**. The PRINT Menu will appear.

2. Select Define Print Spec by typing *2*, and then press **CTRL-C**. The Pre-defined Print Spec Menu will appear.

3. Respond to the Print Spec Name prompt by typing the name you've chosen for your Print Spec.

4. Press **CTRL-C**. The blank Print Spec form will appear.

5. Look at your list of the data items you want printed.

6. On the Print Spec blank form, type an *X* next to each data item you want to have printed on the printout. Press **TAB** to move the cursor from one data item to another. Press **CTRL-N** and **CTRL-P** to move back and forth between pages of the form.

7. Type *S* in the data item you want to use for sorting. If you want that data item to be printed, you also need an *X* in that data item. For example, SALARY: *XS* will print salary and sort the printout in order by salary.

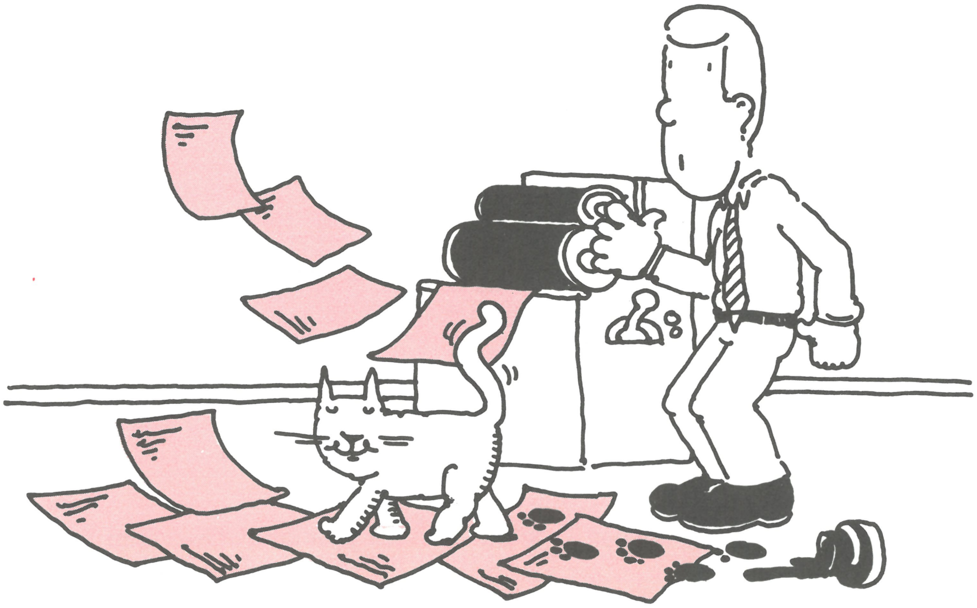
8. When your Pre-defined Print Spec is filled out the way you want it, press **CTRL-C**. The *File* program automatically stores your Print Spec on the *Stategov* data disk.

REMINDER: You can always press ***ESC*** *and start over again if you make a lot of mistakes.*

Finishing Up

Please save your planning notes to use in the next activity! If possible, proceed to Activity 6. If you don't have the time right now, end the session on the computer in the usual manner, putting the disks where they belong. If your class has more than one copy of the *Stategov* file data disk, be sure you have some way of knowing which disk has your Pre-defined Print Spec stored on it.

ACTIVITY 6: MAKING THE PRINTOUT



You've planned your printout and prepared a Pre-defined Print Spec. In this activity, you'll print out your data and use the data to answer the questions you originally posed.

What You'll Do

You will print out the data, using your Pre-defined Print Spec. Then, you'll analyze the printout to decide whether the information on it helps you to answer your original question. Finally, you'll decide what additional information you need to answer your question.

What You'll Need

Before you continue, make sure that the teacher or someone else has made a backup copy of the *Stategov* data disk containing the data forms for all of the states and all of the Pre-defined Print Specs.

You will also need:

- Your worksheet from the last activity when you planned your printout
- A *File* program disk
- A *Stategov* data disk
- An Apple *II*e or IIc computer
- A printer

Printing Your Data

Now you're ready to print the data from your *Stategov* file. Start up the *File* program in the usual way.

The PFS: File Function Menu is on your screen and the *Stategov* data disk is in Drive 1.

1. Turn the printer on and adjust the paper.
2. Select PRINT by typing *5*, and then press **CTRL-C**. The PRINT Menu will appear.
3. Select Print Forms by typing *1*, and then press **CTRL-C**. A Retrieve Spec form will appear on the screen. Refer to your planning worksheet. Which data items were you planning to use to select forms for printing?
4. Press **TAB** to move the cursor to the data items you'll use to type your Retrieve Specs.
5. Type your Retrieve Specs. Press **CTRL-C** to continue.
6. The Print Options Menu will appear. Type the name of your Pre-defined Print Spec.
7. Press **TAB** to move the cursor to ADD LINEFEED CHARACTERS (Y/N). Type *Y*, unless you're sure your printer doesn't need the extra linefeed.
8. Press **TAB** to move the cursor to LINES PER PAGE. Refer to your planning notes. How many lines per page did you need? Type in your number.
9. Press **CTRL-C** to continue.

The printout begins. If it doesn't, make sure the printer is turned on and properly connected to your computer. Make sure there is paper in the printer.

Finish your session on the computer in the usual manner.

Using the Printout to Answer Your Question

Look over your printout. Does it look the way you expected it to look? Does it give you the information you want? Do you think the data are accurate? Why or why not?

Decide whether the information on your printout is enough to answer the question you had set up. Sometimes you may have too much information! If that happens, take a pencil and circle the information that is directly related to your question or problem.

Sometimes you have to study the data for a while and make some judgments and interpretations.

You may find that the data aren't in exactly the right order to be useful. If this is the case, refer back to your planning sheets and decide upon a more effective way to sort the information.

In some cases, the data in the *Stategov* file can only give you part of the answer to your question. You may need to look up more information in the library.

Try to summarize your answers to the original question, based on the information in your printout. If this is impossible, decide instead what additional information you need in order to answer the question.

Finishing Up

As you are looking at your printout and the printouts that your classmates have made, notice any data that you think is wrong. Circle the data item on the printout with a pencil or pen. Is there some data missing that you know how to fill in? Write it on the printout.

Talk with your classmates about what you learned from their printouts.

ACTIVITY 7: UPDATING THE STATEGOV FILE

By now, you and your classmates have probably discovered some errors or missing data in the *Stategov* file.

What You'll Do

You and your partner will work together to update the forms, correcting errors and filling in missing data.

What You'll Need

For this lesson you'll need:

- An Apple *IIe* or IIc computer
- A *Stategov* data disk
- Printouts on which your classmates have circled errors

Printing Copies of the Data Forms

Make a printed copy of the data forms for each state you are working on. Here's one way to make these forms:

Start up the *File* program in the usual manner. The PFS: File Function Menu is on the screen and the *Stategov* data disk is in Drive 1.

1. Turn the printer on and adjust the paper.
2. Select SEARCH/UPDATE by typing *4*. Press **CTRL-C**. A blank Retrieve Spec form will appear.
3. Use the Retrieve Spec to search for the first state you'll be working with. When the data form for that state comes on the screen, press **CTRL-O**. The Print Options Menu will appear.
4. Press **TAB** to move the cursor to LINES PER PAGE, and type *22*.
5. Press **CTRL-C**. The form should begin printing.
6. Repeat this procedure until you've made a copy of all of the data forms you need.
7. End the session on the computer in the usual manner.

Handwriting Your Updates

Use your printed data forms to write down corrections and additions to the data. You may get some help from the notes your classmates have been making on everyone's printouts. You may have to go to the library and look up some of the missing information.

When you have written all of the corrections and additions you can onto the printed forms, you're ready to update the *Stategov* data disk.

Updating the Stategov Data File

Here's the procedure:

1. Start up the *File* program as usual. The PFS: File Function Menu is on the screen and the *Stategov* data disk is in Drive 1.
2. Select SEARCH/UPDATE by typing *4*. Press **CTRL-C**. A Retrieve Spec form will appear.
3. On the Retrieve Spec, type the name of the first state form you want to update.
4. When that state's data form appears on the screen, type in your additions and corrections. Refer to your updated forms for the new or changed data.
5. When you have finished updating a form, press **CTRL-C**.
6. Continue updating until you have finished all of the forms you were responsible for.
7. End the session in the usual manner.

ACTIVITY 8: USING THE STATEGOV FILE

Now you and your classmates have a tested and updated file of data on state government, which you can use in your studies.

What You'll Do

Use the planning worksheet to plan and print the information you need to answer the questions.

Suggested Projects

There is a list of suggested questions at the beginning of this series of activities. Another list of projects follows. In many cases, you will need to get several different printouts in order to answer the questions fully. Have fun!

- Choose two geographically distant regions of the United States. Compare and contrast the state governments of these regions. Are the governors mostly Republican or Democratic? Are the legislators primarily Republican or Democratic? Is the legal age for driving different in the two regions? Are the crime rates different in the regions?

- Make a study of the age of majority for various activities. Which states allow marriage at the youngest age? Which states have the youngest age requirement for buying beer? Which states require you to stay in school until you are 18?

- Play a game of "Twenty Questions" with a classmate. To do this, prepare a list of 20 questions about state government that you think your file will be able to answer. Divide the questions evenly between you and your classmate and work on a computer with your *Stategov* file. Decide who will go first, and time how long it takes to retrieve the answers. The person who retrieves the most answers in the least time wins.

- Make a study of the political parties that control state governments. Which states have a majority of Republicans in the legislature? Do the states that have Republican governors also have Republican legislatures? Do some regions of the United States have predominantly Democratic governments?

- Prepare a booklet entitled "Meet Your State Government." In this booklet, arrange printouts so that each page contains information on a different topic. Your town's newspaper probably has had an issue containing pictures of the governor or some of the representatives to the state legislature. Find all the pictures you can and attach them to appropriate pages of the booklet.

Scholastic pfs®: U.S. Government Data Bases

Local Government

LOCAL GOVERNMENT: LESSON PLANS

Overview

The activities in this unit teach students how to create a data file that has already been designed. The file focuses on the political structure and functioning of your local government. The file is named *Local*, but you may want to give it the name of your town, city, or county.

This file can teach your students a lot about how their community functions, as they learn about the offices and organizations that run it.

Building the file will be a class project. You will have to divide the class into pairs of students, and assign each pair the responsibility of gathering data for a few different officials. If the project is well planned and organized, the resulting file may be useful not only to your class, but to the community at large.

The activities in this unit carefully describe how to build a file, and suggest the kinds of data that will be useful, but the final "look" of the file is open-ended. You and your class should discuss the type of events you want to concentrate on. The clearer you are as to your goal, the more useful the data file will be.

Key Topic Areas in American Government

The major topic covered is Local Government.

Description of File Contents and Organization

Figure A on page 5 shows the file design. It also appears in the student activities unit. You should feel free to alter the design to tailor it to your curriculum needs. The form design on the disk is three pages (screens) long.

Page 1

The local government official's NAME and TITLE appear on Page 1, along with information about his RESPONSIBILITIES.

Page 2

Data on Page 2 of the *Local* form includes the AGENCY represented by the official and the SERVICES PROVIDED by that agency.

Page 3

On Page 3 of the form, students enter their names, and when and where they obtained the information they have entered into their form.

Grade Level Suggestions

This unit is suitable for students in fifth grade and above.

Hardware Needed

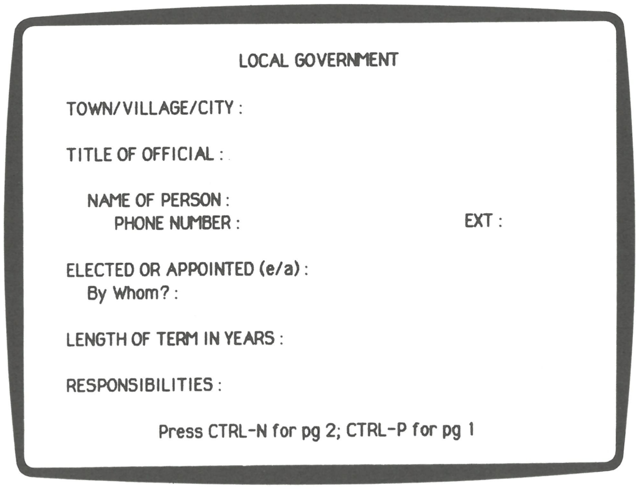
Each activity tells what equipment and software is needed. Most of the activities require an Apple *II*e or IIc computer, one disk drive, a monitor, and a printer. Activities 4, 5, and 7 do not require a printer, and no equipment is needed for Activities 2 and 3.

Classroom Management

Before each activity, make copies of the print materials and distribute them to students. Then refer to the activity-by-activity lesson plans, beginning on page 6. These are in chart form. They will tell you the objectives of each activity, how much time it takes, and how to prepare for and manage each one.

Disk Management

If each student pair is entering data on different disks, you could end up with 10 or 15 disks. You will want to combine the forms contained on these data disks into one file. To do this, use the COPY function from the PFS: File Function Menu. Copy the specific forms, not the entire disk, using the Copy Selected Forms option. You may want to ask students to label their disks with the names of the officials or organizations they researched, so you know which forms to select for copying.



```
                    LOCAL GOVERNMENT

TOWN/VILLAGE/CITY :

TITLE OF OFFICIAL :

  NAME OF PERSON :
    PHONE NUMBER :                         EXT :

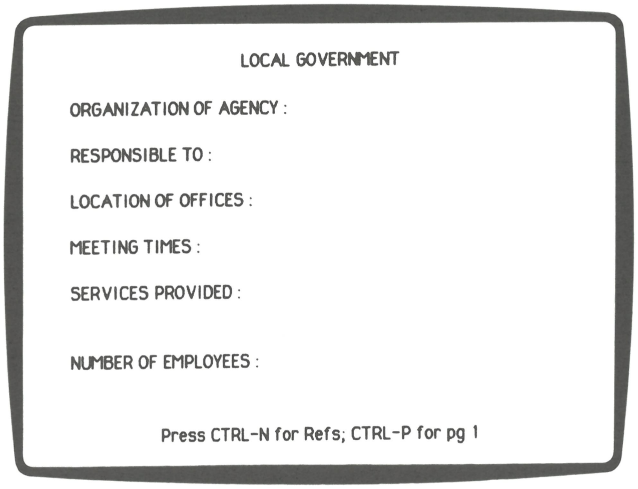
ELECTED OR APPOINTED (e/a) :
  By Whom? :

LENGTH OF TERM IN YEARS :

RESPONSIBILITIES :

         Press CTRL-N for pg 2; CTRL-P for pg 1
```

Page 1



```
                    LOCAL GOVERNMENT

ORGANIZATION OF AGENCY :

RESPONSIBLE TO :

LOCATION OF OFFICES :

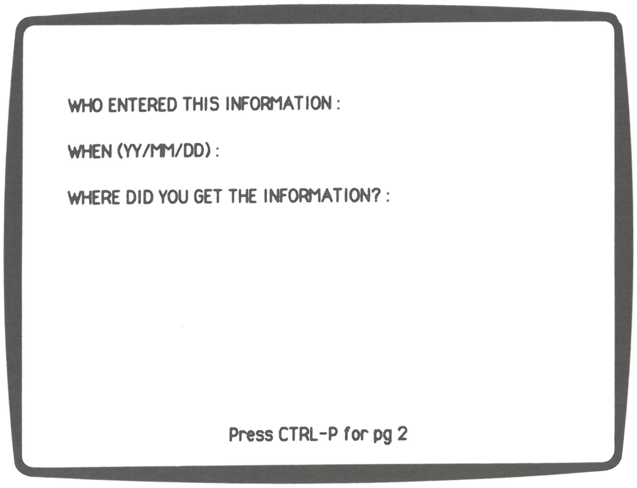
MEETING TIMES :

SERVICES PROVIDED :


NUMBER OF EMPLOYEES :


         Press CTRL-N for Refs; CTRL-P for pg 1
```

Page 2



```


WHO ENTERED THIS INFORMATION :

WHEN (YY/MM/DD) :

WHERE DID YOU GET THE INFORMATION? :







                Press CTRL-P for pg 2
```

Page 3 Figure A

Local Government
Activity-by-Activity Lesson Plan Chart

Activity	Objectives	Preparation	Management	Time (per student)
1.	• Brainstorm ideas about local government. • Locate sources of social and historical information. • Identify data needed to answer questions. • Use library references. • Print blank forms.	• Prepare a list of ideas for research projects to discuss with your class. • Use the DESIGN function of *File* to create the *Local* file design on disk. Make copies for each student pair.	• Introduce the project and activity to the class. • Schedule time on the computer for student pairs.	35 minutes
2.	• Gather and organize information from a selection of current and historical sources. • Organize and collect data.	• Arrange for students to use school or community library, have reference sources available in the classroom, or have a representative of your local government visit the classroom.	• Assist students in locating sources of information. • Assist students in selecting officials and agencies to describe. • Collect the filled-in data forms for use in the next activity.	Depends on complexity of project. Some research may be assigned for homework.
3.	• Validate accuracy of data collected.	• Hand out the filled-in data collection forms to students to check for accuracy. Make sure each student pair receives a form other than the one they themselves filled out.	• Review with students the guidelines for checking the data forms as discussed in the activity. • Collect the checked forms when the students are finished.	Depends on the amount of data gathered and method of research. Could be assigned as homework.
4.	• Enter data into a computerized data base. • Add new forms to the file.	• Copy the *Local* file from the master disk onto the working disks. • Set up the printer.	• Hand out the checked data forms. • Schedule time on computer for student pairs.	45 minutes, depending on number of data forms each student pair is to enter.

(Continued on next page.)

Local Government
Activity-by-Activity Lesson Plan Chart

Activity	Objectives	Preparation	Management	Time (per student)
5.	• Define a historical or social problem and the information needed to answer it. • Organize data collected. • Plan printout.	• Copy the *Local* disk from the master onto the working disks.	• Schedule time on computer for student pairs. • Help students choose their projects. • Label disks so that each student pair knows which disk contains their Pre-defined Print Spec.	35 minutes
6.	• Analyze and interpret printout. • Determine whether additional information is needed. • Print using a Pre-defined Print Spec and interpret printout.	• Give student pairs the *Local* file disk that contains their Pre-defined Print Spec. • Schedule time on computer for student pairs. • Set up the printer.	• Help students to interpret data and to decide what further information would help them answer their original questions. • Display student printouts on the wall so students can learn from each other's work.	35 minutes
7.	• Update and validate data on file. • Collect data to be entered.	• Copy the *Local* file from the master disk onto the working disks. • Set up the printer.	• Schedule time on computer for student pairs. • Help students manage the data disks.	Depends on amount of data gathering and file updating to be done.
8.	• Determine a social or historical problem and the data needed to solve it. • Organize and analyze data. • Synthesize information and draw conclusions. • Plan, print, and interpret printout.	• Copy the *Local* file from the master disk onto the working disks. • Provide students with copies of worksheet for planning printouts. • Set up the printer.	• Schedule time on computer for student pairs. • Help students choose their projects. • Help students debug their printouts.	45 minutes

INTRODUCTION

This series of activities will help you learn the following:

- how to create and use computer data files.
- some facts about the structure and function of local governments.

The skills you develop in creating and using data files will be useful to you not only in your school work, but in organizing information on any subject that is important to you, such as your record album collection, personal address book, club members and club activity schedules, or paper route customers.

The knowledge you gain about local government and the file of data you create about your own government will help you study questions such as these:

- What is the role of a mayor?
- Who are the council members?
- What do council members do?
- What services do the various local departments provide?
- How large is the local government?
- Who would I call to find out how to apply for a job with the city government?
- There is a large hole in our street. Who do I call to complain about it?
- How do I get a parade license? A license for my dog? A license for my moped?
- Who are the members of the Board of Education? When does it meet?
- Who are the elected officials in the government?
- Who are the appointed officials in the government?
- Compare and contrast the responsibilities of elected and appointed officials. How are they the same? How are they different?

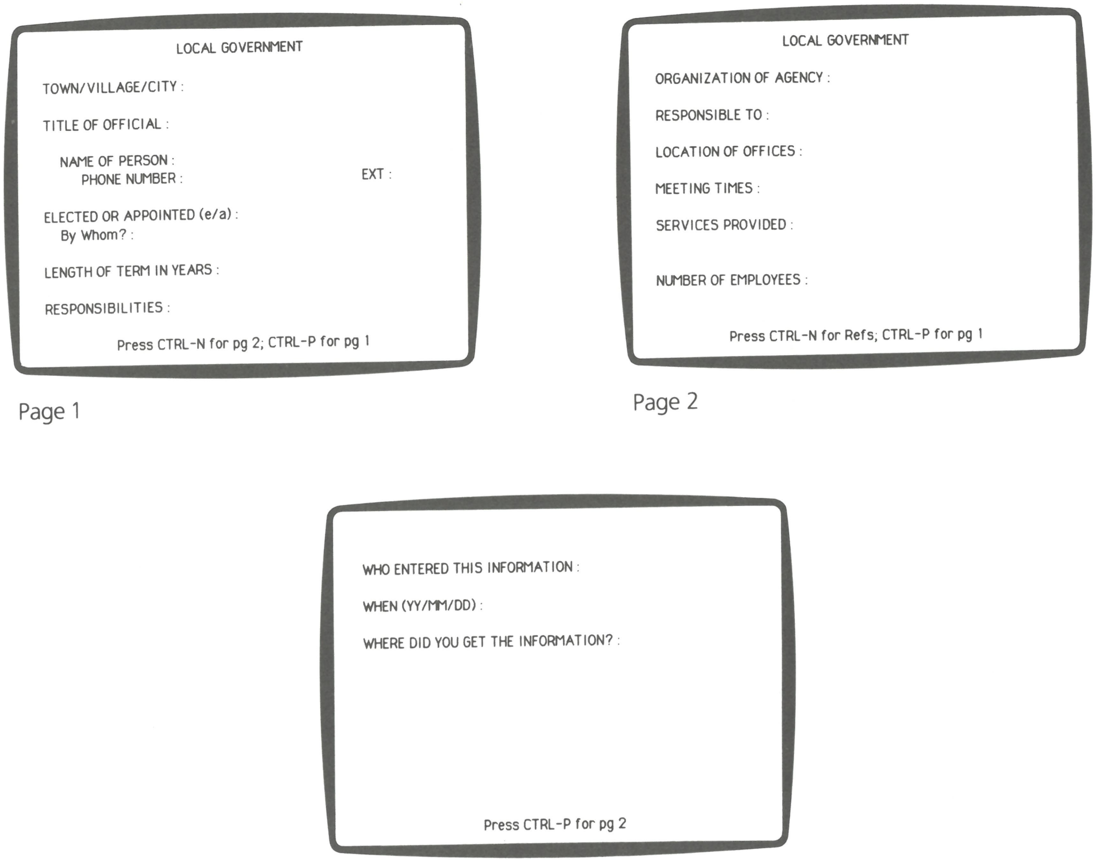
Activities in This Unit

This series of eight activities shows you how to create and use a file of data on local government. Complete the activities in order.

Activity 1: Preparing to Gather Data
Activity 2: Gathering Data on Printed Forms
Activity 3: Checking the Accuracy of the Data
Activity 4: Adding New Forms to the *Local* File
Activity 5: Planning Printouts of the *Local* File
Activity 6: Making the Printout
Activity 7: Updating the *Local* File
Activity 8: Using the *Local* File

ACTIVITY 1: PREPARING TO GATHER DATA

A blank data form designed for storing data is shown in Figure 1. You and your partner will use this form for gathering data.



```
                LOCAL GOVERNMENT

TOWN/VILLAGE/CITY :

TITLE OF OFFICIAL :

  NAME OF PERSON :
     PHONE NUMBER :                          EXT :

ELECTED OR APPOINTED (e/a) :
  By Whom? :

LENGTH OF TERM IN YEARS :

RESPONSIBILITIES :

         Press CTRL-N for pg 2; CTRL-P for pg 1
```

Page 1

```
                LOCAL GOVERNMENT

ORGANIZATION OF AGENCY :

RESPONSIBLE TO :

LOCATION OF OFFICES :

MEETING TIMES :

SERVICES PROVIDED :


NUMBER OF EMPLOYEES :

         Press CTRL-N for Refs; CTRL-P for pg 1
```

Page 2

```
WHO ENTERED THIS INFORMATION :

WHEN (YY/MM/DD) :

WHERE DID YOU GET THE INFORMATION? :







              Press CTRL-P for pg 2
```

Page 3

Figure 1

What You'll Do

First, your class will plan the research needed to create the file. Then you and a partner will use the *File* program on your computer to print out blank data forms for the *Local* file. Next, you'll prepare to gather data about your local government from any available sources.

What You'll Need

- A *File* data disk called *Local*
- A *File* program disk
- An Apple *IIe* or IIc computer
- A printer

Planning the Research

Your teacher will lead a discussion about the kinds of information your class will gather. Look at Figure 1 on page 10. Your class may decide only to gather some of the data items shown on that form.

Deciding on a List of Questions

It is important for you and your classmates to be clear about what questions you want to be able to answer with your data file. You need to make your own list of questions, similar to the questions listed in the introduction. The questions you decide upon will depend partly on what kind of government your local city, town, or county has, and how large a community you live in. Larger cities tend to have more government agencies and services than smaller towns.

Deciding Who Will Gather What Information

You will probably need to do some initial research to determine the best way to divide up the work. Once you know the structure of your local government and the various departments, you will be better able to choose who will research certain officials or departments.

Printing Out Your Blank Data Forms

Before you print out your blank data forms, decide how many copies you'll need. You should make twice as many printed forms as you think you will need for your local government. (Some may get messy and you'll have to copy the data over again on a clean form.) The number of forms you need depends on the size of the town or city where you live.

Divide those forms up evenly between the pairs of students who are creating the file, and with the help of your teacher, coordinate who will be responsible for what tasks. Next, follow the procedure below to make copies of the blank data forms.

Starting up the File Program

The following is the standard procedure for starting up the *File* program. Remember this procedure and use it each time you start up *File*.

1. Remove the *File* program disk from its protective jacket and insert it in Drive 1 of the computer. (On the Apple IIc, this is the built-in drive.)

2. If the computer is turned off, turn it on. If the computer is already on, press these three keys all at once: **CTRL**, **OPEN APPLE**, and **RESET**.

3. The PFS: File Function Menu will appear on the screen.

4. Remove the *File* program disk from Drive 1 and put it back in its protective jacket. You won't need it any more for this session on the computer.

5. Insert the *Local* data disk in Drive 1.

Printing Blank Data Forms

The PFS: File Function Menu is on the screen and the *Local* data disk is in Drive 1.

1. Turn the printer on and adjust the paper so that the top of a page of paper is under the print head.
2. Select the ADD function by typing *2*. Press **TAB** to move the cursor to FILE NAME. Type *Local* for the FILE NAME, and then press **CTRL-C**. The *Local* form will appear.
3. Press **CTRL-O** (the letter O, which stands for "output"). The Print Options Menu will appear.
4. Press **TAB** to move the cursor to ADD LINEFEED CHARACTERS (Y/N). Type *Y* for "yes."
5. Press **TAB** to move the cursor to LINES PER PAGE. Type *22*.
6. Press **TAB** to move the cursor to NUMBER OF COPIES. Type the number of copies you need.
7. Press **CTRL-C**. Your printer should begin printing out your blank forms.
8. When printing is finished, press **ESC** to return to the PFS: File Function Menu. Then remove the *Local* data disk from Drive 1 and return it carefully to its protective jacket. Put the disk where your teacher tells you to keep it. Then turn off the computer.

Finding and Listing Your References

Fill in the TOWN/VILLAGE/CITY data item on the top of each of your blank forms for the town or city you are going to study.

Where will you get the data for your *Local* file? You will probably need to do most of your work at your public library. There may be other places to find information. A good source of information on local government is the city hall or the Chamber of Commerce. You may be able to get an appointment with someone from these places who can provide help and information.

Go with your partner to the library. Take your printed data forms with you. Look at various reference materials, such as newspapers or pamphlets about your local government. Most libraries keep these materials together in a folder or binder. Talk to the librarian about additional reference materials that may be available.

Write down the names of the various reference materials you find. You'll probably need to use more than one reference to get all of the data you need. You may want to take notes on which reference materials contain which data items in them.

Finishing Up

Discuss with your partner how you will divide the gathering and recording of data. If you have time now, go to the next activity.

ACTIVITY 2: GATHERING DATA ON PRINTED FORMS

Now that you have your data collection forms and know which sources to use, you are ready to gather data.

What You'll Do

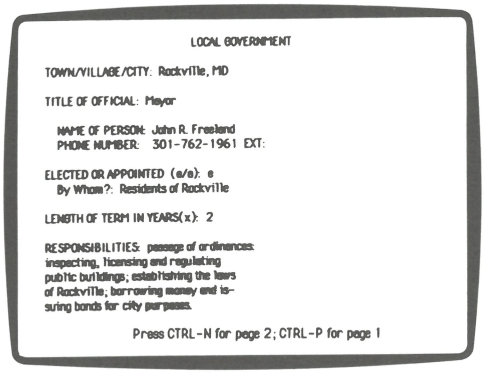
You and your partner will fill in the data on your printed forms for all the local government officals that you are responsible for.

What You'll Need

- Your printed data forms
- Pencils
- Reference materials

Gathering Data on Printed Forms

Figure 2 below shows a sample filled-in form for the Mayor of Rockville, Maryland.



```
                    LOCAL GOVERNMENT

TOWN/VILLAGE/CITY: Rockville, MD

TITLE OF OFFICIAL: Mayor

   NAME OF PERSON: John R. Freeland
   PHONE NUMBER:   301-762-1961 EXT:

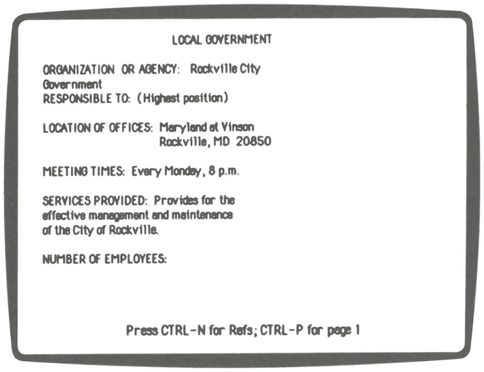
ELECTED OR APPOINTED (e/a): e
   By Whom?: Residents of Rockville

LENGTH OF TERM IN YEARS(x): 2

RESPONSIBILITIES: passage of ordinances:
inspecting, licensing and regulating
public buildings; establishing the laws
of Rockville; borrowing money and is-
suing bonds for city purposes.

          Press CTRL-N for page 2; CTRL-P for page 1
```

Page 1



```
                    LOCAL GOVERNMENT

ORGANIZATION OR AGENCY:  Rockville City
Government
RESPONSIBLE TO: (Highest position)

LOCATION OF OFFICES: Maryland at Vinson
                     Rockville, MD 20850

MEETING TIMES: Every Monday, 8 p.m.

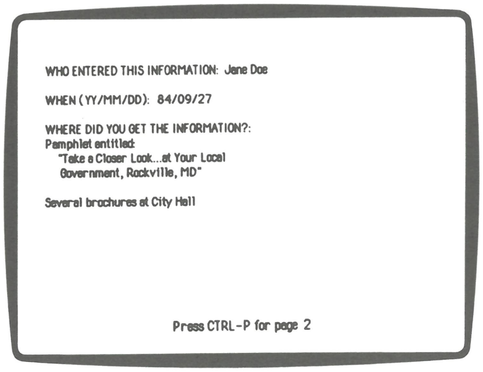
SERVICES PROVIDED: Provides for the
effective management and maintenance
of the City of Rockville.

NUMBER OF EMPLOYEES:



          Press CTRL-N for Refs; CTRL-P for page 1
```

Page 2



```
WHO ENTERED THIS INFORMATION: Jane Doe

WHEN (YY/MM/DD): 84/09/27

WHERE DID YOU GET THE INFORMATION?:
Pamphlet entitled:
   "Take a Closer Look...at Your Local
   Government, Rockville, MD"

Several brochures at City Hall

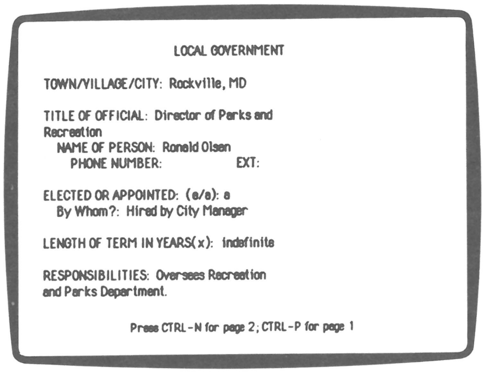



                Press CTRL-P for page 2
```

Page 3

Figure 2

Figure 3 below shows a sample filled-in form for Rockville's Director of Parks and Recreation.



```
                LOCAL GOVERNMENT

TOWN/VILLAGE/CITY:  Rockville, MD

TITLE OF OFFICIAL:  Director of Parks and
Recreation
   NAME OF PERSON:  Ronald Olsen
      PHONE NUMBER:                 EXT:

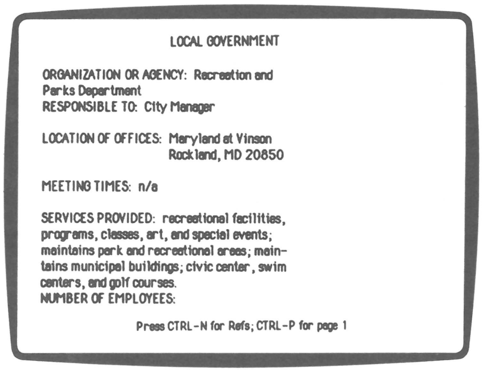
ELECTED OR APPOINTED:  (e/a): a
   By Whom?:  Hired by City Manager

LENGTH OF TERM IN YEARS(x):  indefinite

RESPONSIBILITIES:  Oversees Recreation
and Parks Department.

            Press CTRL-N for page 2; CTRL-P for page 1
```

Page 1



```
                LOCAL GOVERNMENT

ORGANIZATION OR AGENCY:  Recreation and
Parks Department
RESPONSIBLE TO:  City Manager

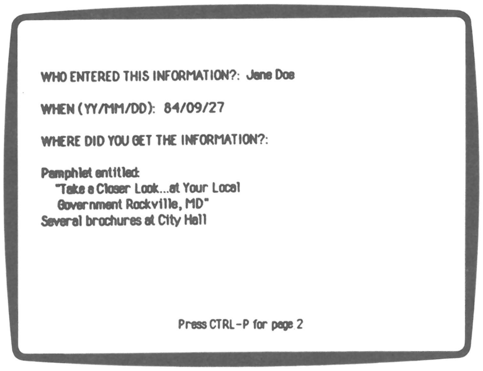
LOCATION OF OFFICES:  Maryland at Vinson
                      Rockland, MD 20850

MEETING TIMES:  n/a

SERVICES PROVIDED:  recreational facilities,
programs, classes, art, and special events;
maintains park and recreational areas; main-
tains municipal buildings; civic center, swim
centers, and golf courses.
NUMBER OF EMPLOYEES:

            Press CTRL-N for Refs; CTRL-P for page 1
```

Page 2



```
WHO ENTERED THIS INFORMATION?:  Jane Doe

WHEN (YY/MM/DD):  84/09/27

WHERE DID YOU GET THE INFORMATION?:

Pamphlet entitled:
   "Take a Closer Look...at Your Local
   Government Rockville, MD"
Several brochures at City Hall



                     Press CTRL-P for page 2
```

Page 3

Figure 3

Take your printed forms to the library. Use the reference materials you've already located to look up information on the people and departments in your local government. Use a pencil to fill in the data. On each form, be sure to write down the references used, and include page numbers.

Here are some things to pay attention to when filling out the forms:

- Fill in the ELECTED or APPOINTED data item with an E or an A—you do not need to write the words out.
- The LENGTH OF TERM IN YEARS can be shown by a single number, for example, *4*. If the person was appointed or hired and doesn't have a specific term length, write *indefinite*.
- The RESPONSIBILITIES data item refers to the duties of the person you've indicated.
- On Page 2 you can list additional services that each particular department or agency provides. Be sure you use the words you want to look up later. For example, if you want to find agencies dealing with public parks, be sure to mention *public parks* in the SERVICES PROVIDED data item.
- On Page 3, enter your name in the WHO ENTERED THIS INFORMATION data item. Fill in the date with the year first, month second, and day third. For example, July 27, 1984 would be entered like this: 84/07/27. Make sure to use two spaces for each, using zeros if needed.
- You may not be able to find data for every data item on the form. That's okay. Fill in as much as you can.
- Fill in the WHERE DID YOU GET THE INFORMATION data item with the name of the reference materials you used. Be sure to include the name of the source and a page number. You may also include the name of the library (or another place, like City Hall) where you collected the data.

Finishing Up

When you have filled in the data on your forms, turn them in to your teacher. The teacher will give the forms to another student to use in the next activity.

ACTIVITY 3: CHECKING THE ACCURACY OF THE DATA

If you have ever used computerized data files to retrieve information, you know how important it is for data to be accurate. It's impossible to retrieve information if it's not in the right format and spelled correctly. For example, suppose a classmate had entered a form for "Mayor," but had spelled it "Mayer." You'd have a terrible time finding that form.

What You'll Do

You and a partner will check on the accuracy of the data forms prepared by your classmates, and correct mistakes or misspellings.

What You'll Need

- Printed data forms for the *Local* file, filled in by your classmates.

Checking the Accuracy of the Data

Here are some guidelines for checking the data forms:

- First, make sure the forms have the WHERE DID YOU GET THIS INFORMATION data item filled in. If they don't, you won't know where your classmates got their data. This should include both the source (a book, article, or pamphlet) and a page number. If this information was not filled in, give the paper forms back to your teacher to return to the students who worked on them.

- Next, check the format of the data. Is everything entered in the correct format? For example, is the date on Page 3 entered correctly? If not, rewrite the data in the proper format. An example of the wrong format would be "Jan. '50" or "January 7, 1950."

- Now look up the information in the sources listed under WHERE DID YOU GET THIS INFORMATION on each form. Check to make sure the information is accurate. Make corrections as needed.

- Look at the RESPONSIBILITIES and SERVICES PROVIDED data items. Do you think the responsibilities and services listed on the data form are the important ones to put in the computerized file? Are all the words spelled correctly? Make any changes you think are needed. You may want to discuss some of the changes with the classmate who wrote the data on the form.

- When you have finished checking and correcting a form, write your name on the bottom of the page.

Finishing Up

When you have finished checking and correcting all of the forms, turn them in to your teacher.

ACTIVITY 4: ADDING NEW FORMS TO THE LOCAL FILE

Now that you have a collection of local government data on printed forms, corrected and ready to use, it's time to store the data on the file disk.

What You'll Do

In this activity, you and your partner will work together to type data into the *Local* file.

What You'll Need

- A set of printed forms filled in by classmates (not you and your partner) and checked by another pair of classmates (not you and your partner)
- A *File* program disk
- A *Local* data disk
- An Apple *II*e or IIc computer

Entering Data

Decide with your partner how you will work together to enter the data. One person should work on the keyboard while the other reads the instructions and data. You can take turns doing this.

Start up *File* in the usual manner. Put the *Local* data disk in Drive 1. The PFS: File Function Menu is on the screen.

1. Select ADD by typing *2*.

2. Press **TAB** to move the cursor to FILE NAME.

3. Type *Local*, and then press **CTRL-C**. A blank form appears on the screen.

CAUTION: Do not remove the disk from the disk drive or turn the computer off unless the PFS: File Function Menu is on the screen. Removing the disk while using the ADD function may result in damage to the file.

4. Now type the data from your printed forms one at a time. Be sure to type the name of your town or city on Page 1 of each form. One partner can read the data from the printed form out loud while the other partner types the data.

5. Both partners should proofread the data on the screen. If you see a mistake, the **TAB** and **APPLE-TAB** keys will move the cursor back and forth between the data items. The **ARROW** keys will move the cursor within a data item. Mistakes can be corrected by typing over the information you no longer want.

6. If you make a lot of mistakes and want to start all over again, press **ESC**. This will take you back to the PFS: File Function Menu without storing the form that has the mistakes.

7. To get to the next page of the form, press **CTRL-N**. To return to a previous page of the form, press **CTRL-P**.

8. When you and your partner agree that the data on the form are accurate, press **CTRL-C** to store the form. You may want to mark your data collection form to show that the data has been entered into the computer.

9. The next blank form should now be on your screen. Enter the data for the next official you are working on. Continue the procedure explained above until you have entered the data for all of your states.

10. When a blank form appears and you do not have any more information to add, press **ESC**. The PFS: File Function Menu will appear.

Testing the File

Now that you have entered your data into the file, perform a little test to make sure that your data have been stored in the way you intended.

The PFS: File Function Menu is on your screen and the *Local* data disk is in Drive 1.

1. Look at your data collection sheets and choose one of the officials.
2. Select the SEARCH/UPDATE function by typing *4*.
3. Press **CTRL-C**. The blank Retrieve Spec form appears.
4. Type the title of the official you chose in Step 1 above.
5. Press **CTRL-C**. The form for that official will appear on the screen.
6. Look at the data you entered for that official. Is it correct? Check it against your printed form. Correct any mistakes.
7. When you are finished checking, press **CTRL-C**.

Check a few more of the officials you were responsible for. When you are sure that the data have been entered correctly, end the activity.

Finishing Up

The PFS: File Function Menu is on your screen. Remove the *Local* disk from the disk drive and put the disk in its protective jacket.

REMINDER: Never remove the disk from the disk drive or turn the computer off unless the PFS: File Function Menu is on the screen.

Turn the computer off, unless someone is waiting to use the same program. Put the program disks where your teacher has instructed you to keep them.

ACTIVITY 5: PLANNING PRINTOUTS FROM THE LOCAL FILE

Now that you and your classmates have typed and stored data for all the local government officials that you found, you can use the *Local* file to get information in all kinds of interesting ways.

What You'll Do

You and your partner will plan a printout from the file and define a Print Spec.

Your creative challenge is to define a question or problem that is interesting to you and then to produce a printout that is useful in answering it.

What You'll Need

Before you proceed, make sure that the teacher or someone else has made a backup copy of the *Local* data disk containing the data forms for your town or city.

You will need:

- A worksheet for planning printouts (see page 20)
- A printed copy of the *Local* data form (with or without data)
- A *File* program disk
- A *Local* data disk
- An Apple *II*e or IIc computer

WORKSHEET FOR PLANNING PRINTOUTS

Use this worksheet to plan printouts of data from a *PFS* file. After you answer the questions on this worksheet, take it to the computer and refer to it as you set up the Pre-defined Print Spec and then print the data.

Project or Student Name: ____________________

Name of File: ____________________

Defining Information Needs

What is the question or problem? ____________________

What data items will be included on the printout? ____________________

Which data item will be used for sorting the printout? ____________________

Setting Up a Pre-defined Print Spec

What will you name the Pre-defined Print Spec (1–8 characters)? ____________________

Printing the Data

1. Set up the Retrieve Spec. Which forms will be selected for printing? ____________________

2. Set up the Print Options. Will you print the item names (Y or N)? ____________________

Do you need to add linefeed characters for your printer (Y or N)? ____________________

How many lines do you need to print from each form page? ____________________
Use this number in the Lines Per Page option.

Defining Your Problem

Look at the list of questions in the introduction to this unit. Which questions interest you? Discuss with your partner which question or problem you want to work on. You don't have to use an example from the list, but it may suggest some ideas to you.

What question or problem will you and your partner try to answer about local government? Write your question on the planning worksheet.

Planning Your Printout

What information from the *Local* file will be useful to you in answering your question?

You and your partner should have in front of you a printed copy of the *Local* data form. Discuss with your partner what you want your printout to look like. Here are some questions to discuss:

1. Which data items do you want to appear on the printout? For example, you might print just the official's NAME and LENGTH OF TERM. If your question relates to a certain department and its function, you probably would want ORGANIZATION or AGENCY, and SERVICES PROVIDED.

On your planning worksheet, write a list of the data items you want to include in your printout.

2. In what order do you want the forms to be printed? Think about this carefully. For example, if you are comparing elected and appointed officials, you might want to sort the forms by ELECTED OR APPOINTED, so that all the officials who are elected would be grouped together. Or, if you are looking for only those people within a certain department, you would need to sort by that department.

If you are retrieving information from more than one form, write on your planning worksheet the data item you will use for sorting forms for the printout.

3. Write on your planning worksheet the Retrieve Specs you'll use to select the forms for printing. For example, if you want to select all Council members whose terms of office started in the 1800s, use TERM OF OFFICE FROM: *=1800 ..1899.*

4. You'll need to use a special procedure to set up your printout with the correct spacing. There are two major considerations:

A. Each form in the file has three pages of data. Will your printout include data items from just one of those pages? Two of the pages? All three? ____________

B. How many lines will be printed from each of the three pages of the form (depending on which data items you will be printing)? For example, NAME OF PERSON takes only one line, while RESPONSIBILITIES can take up to four lines. Here's a formula for setting up your printout with the correct spacing:

Write the number of lines you think will be printed from each page of the data form:

Number of lines from Page 1 of the form: ____________

Number of lines from Page 2 of the form: ____________

Number of lines from Page 3 of the form: ____________

C. Add 3 to the largest number above: ____________

D. Does this number divide equally into 66? ____________

E. If it does, then this is the number of LINES PER PAGE you will put in your Print Options Menu.
Number for Lines Per Page: ____________

F. If it doesn't, figure out the next largest number that divides equally into 66. For example, if the number in Step 2 is 9, the next largest number that divides equally into 66 is 11.
Number for Lines Per Page: ____________

5. What will you name your Pre-defined Print Spec? Remember, the name must be eight characters or less, and should be one that you can identify easily. You might use your own last name. Better yet, give the Pre-defined Print Spec a name that has something to do with your printout. For example, a printout of the city council members might have a Pre-defined Print Spec called COUNCIL.

Write on your planning worksheet the name you will give to your Pre-defined Print Spec.

Defining Your Print Spec

Now you and your partner are ready to take your planning worksheet to the computer and define your Print Spec. Here's the procedure:

Start up the *File* program as usual. Put the *Local* data disk in Drive 1. The PFS: File Function Menu is on the screen.

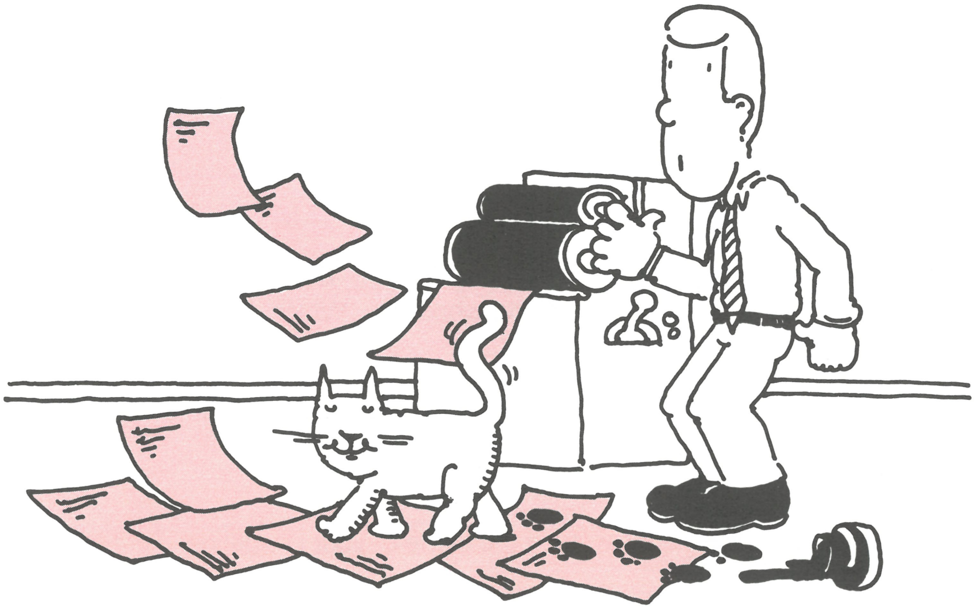
1. Select PRINT by typing *5*, and then press **CTRL-C**. The Print Menu appears.
2. Select DEFINE PRINT SPEC by typing *2*, and then press **CTRL-C**. The Pre-defined Print Spec Menu will appear.
3. Respond to the Print Spec Name prompt by typing the name you've chosen for your Print Spec.
4. Press **CTRL-C**. The blank Print Spec will appear.
5. Look at your list of the data items you want printed.
6. On the Print Spec blank form, type an *X* next to each data item you want to have printed on the printout. Press **TAB** to move the cursor from one data item to another. Press **CTRL-N** and **CTRL-P** to move back and forth between pages of the form.
7. Type *S* in the data item you want to use for sorting. If you want that data item to be printed, you also need an *X* in that data item. For example, your Print Spec could be ELECTED OR APPOINTED: *XS*.
8. When your Pre-defined Print Spec is filled out the way you want it, press **CTRL-C**. The *File* program automatically stores your Print Spec on the *Local* data disk.

*REMINDER: You can always press **ESC** and start over again if you make a lot of mistakes.*

Finishing Up

Please save your planning notes to use in the next activity! If possible, proceed to Activity 6. If you don't have the time, end the session on the computer in the usual manner, putting the disks where they belong. Make sure you have some way of knowing which disk has your Print Spec stored on it.

ACTIVITY 6: MAKING THE PRINTOUT



You've planned your printout and prepared a Pre-defined Print Spec. In this activity, you'll print out your data and use the data to answer the questions you originally posed.

What You'll Do

You'll print out the data, using your Pre-defined Print Spec. Then, you'll analyze the printout to decide whether the information on it helps you to answer your original question. Finally, you'll decide what additional information you need to answer your question.

What You'll Need

Before you continue, make sure that the teacher or someone else has made a backup copy of the *Local* data disk containing the data forms for your local government, and all of the Pre-defined Print Specs.

You will need:

- Your worksheet from the last activity when you were planning your printout
- A *File* program disk
- A *Local* data disk
- An Apple *II*e or IIc computer
- A printer

Printing Your Data

Now you're ready to print the data from your *Local* file. Start up the *File* program in the usual manner.

The PFS: File Function Menu is on your screen and the *Local* data disk is in Drive 1.

1. Turn the printer on and adjust the paper.
2. Select PRINT by typing *5*, and then press **CTRL-C**. The PRINT Menu will appear.
3. Select PRINT FORMS by typing *1*, and then press **CTRL-C**. A Retrieve Spec form will appear on the screen. Refer to your planning worksheet. Which data items were you planning to use to select forms for printing?
4. Press **TAB** to move the cursor to the data item you'll use to type your Retrieve Specs.
5. Type your Retrieve Specs. Press **CTRL-C** to continue.
6. The Print Options Menu will appear. Type the name of your Pre-defined Print Spec.
7. Press **TAB** to move the cursor to ADD LINEFEED CHARACTERS (Y/N). Type *Y*, unless you're sure your printer doesn't need the extra linefeed.
8. Press **TAB** to move the cursor to LINES PER PAGE. Refer to your planning notes. How many lines per page did you need? Type in that number.
9. Press **CTRL-C** to continue.

The printout begins. If it doesn't, make sure the printer is turned on and properly connected to your computer. Make sure there is paper in the printer.

Finish your session on the computer in the usual manner.

Using the Printout to Answer Your Question

Look over your printout. Does it look the way you expected it to look? Does it give you the information you want? Do you think the data are accurate? Why or why not?

Decide whether the information on your printout is enough to answer the question you had set up. Sometimes you may have too much information! If that happens, take a pencil and circle the information that is directly related to your question or problem.

Sometimes you have to study the data for awhile, and make some judgments and interpretations. For example, if your question was to contrast the responsibilities of elected officials with appointed officials, it might take you awhile to study the printout and arrive at conclusions.

You may find that the data aren't in exactly the right order to be useful. If this is the case, refer back to your planning worksheets and decide upon a more effective way to sort the information. In some cases, the data in the *Local* file can only give you part of the answer to your question. You may need to look up more information in the library.

Try to summarize your answers to the original question, based on the information in your printout. If this is impossible, decide instead what additional information you need in order to answer the question.

Finishing Up

As you are looking at your printout and the printouts that your classmates have made, notice any data that you think is wrong. Circle the data item on the printout with a pencil or pen. Is there some data missing that you know how to fill in? Write it on the printout.

Talk with your classmates about what you learned from their printouts.

ACTIVITY 7: UPDATING THE LOCAL FILE

By now, you and your classmates have probably discovered some errors or missing data in the *Local* file.

What You'll Do

In this activity, you and your partner will work together to update the forms, correcting errors and filling in missing data.

What You'll Need

- An Apple *II*e or IIc computer
- A *Local* data disk
- Printouts on which your classmates have circled errors

Printing Copies of the Data Forms

Make a printed copy of each of the data forms you are working on. Here's one way to make these forms:

Start up the *File* program in the usual manner. The PFS: File Function Menu is on the screen and the *Local* data disk is in Drive 1.

1. Turn the printer on and adjust the paper.
2. Select SEARCH/UPDATE by typing *4*. Press **CTRL-C**. A blank Retrieve Spec form will appear.
3. Use the Retrieve Spec to search for the first form you'll be working with. When the data form comes on the screen, press **CTRL-O**. The Print Options Menu will appear.
4. Press **TAB** to move the cursor to LINES PER PAGE, and type *22*.
5. Press **CTRL-C**. The form should begin printing.
6. Repeat this procedure until you've printed a copy of all of the data forms you need.
7. End the session on the computer in the usual manner.

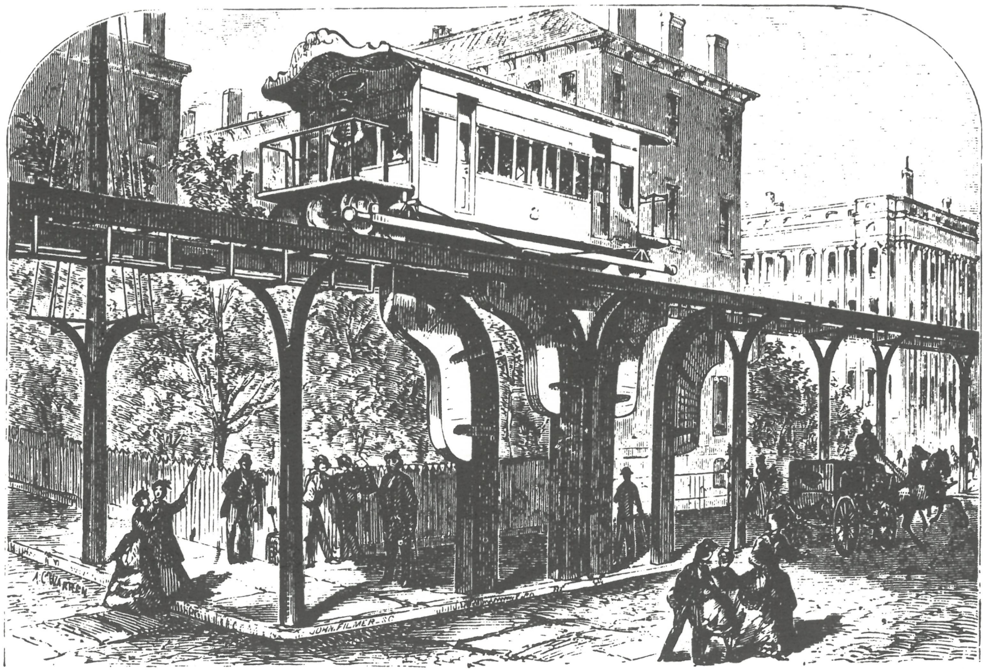
Handwriting Your Updates

Use your printed data forms to write down corrections and additions to the data. You may get some help from the notes your classmates have been making on everyone's printouts. You may have to go to the library and look up some of the missing information.

When you have handwritten onto the paper forms all the corrections and additions you can, you're ready to update the *Local* data disk.

Updating the Local Data File

1. Start up the *File* program as usual. The PFS: File Function Menu is on the screen and the *Local* disk is in Drive 1.
2. Select SEARCH/UPDATE by typing *4*. Press **CTRL-C**. A Retrieve Spec form will appear.
3. On the Retrieve Spec, type the name of the first person you want to update.
4. When that person's data form appears on the screen, type in your additions and corrections. Refer to your updated forms for the new or changed data.
5. When you have finished updating a form, press **CTRL-C**.
6. Continue updating until you have finished all of the forms you were responsible for.
7. End your session in the usual manner.



ACTIVITY 8: USING THE LOCAL FILE

Now you and your classmates have a tested and updated file of data on your local government. If you haven't already learned a lot about your government, you can learn even more by continuing to use the *Local* file in your studies.

What You'll Do

Use the planning worksheet to plan your project. Then get the printouts you need to answer the questions.

Suggested Projects

Here is a list of suggested projects you can do using your files. In many cases you will need to get several different printouts in order to answer the questions thoroughly. Have fun!

- Prepare an organizational chart of your local government, listing the various departments and people involved. (HINT: You will need to use the data item: RESPONSIBLE TO to build a hierarchy of the various offices.)

- Play a game of "Twenty Questions" with a classmate. To do this, prepare a list of 20 questions about your local government that you think your file will be able to answer. Divide the questions evenly between you and your classmate and work on a computer with your *Local* file. Decide who will go first, and time how long it takes to retrieve the answers. The person who retrieves the most answers in the least time wins.

- Prepare a profile of some of the elected officials in your town or city such as the mayor and council members. Retrieve their NAMES and RESPONSIBILITIES from your *Local* file and do additional research into their backgrounds. Dig up anything you can find. If you want, add some of this additional information to your *Local* file.

- Prepare a booklet entitled "Meet Your Local Government." In this booklet, arrange printouts so that each page contains information on one person. Your town's newspaper probably has had an issue that has contained pictures of these officials. Find all the pictures you can and attach them to each page.

Scholastic pfs®: U.S. Government Data Bases

Quick Guide

QUICK GUIDE

This Quick Guide contains useful procedures, hints, and facts about *PFS: File*. Refer to this handout when you need some quick information about *File*. You'll find information on:

- How to load *File* into the computer
- How to use the functions on the *File* menu
- How to use various keys
- How to search for information

Starting Up File

1. Remove the *File* program disk from its protective jacket and insert it into Drive 1. (Drive 1 is the built-in drive in the Apple IIc.) Close the disk drive door.
2. If the computer is off, turn it on. Then turn on the monitor. If the computer is already on, press the **CTRL**, **OPEN APPLE**, and **RESET** keys together. The PFS: File Function Menu will appear.
3. Now that *File* is in the computer's memory, you don't need it anymore. Remove it from the drive and return it to its protective jacket.
4. Insert the data disk you want to use into Drive 1 and close the disk drive door.

CAUTION: Never remove a data disk from the drive, or turn off the computer, unless the PFS: File Function Menu is on the screen. Doing so at any other time could lead to the loss of data.

Ending a Session With File

When you want to stop working, make sure the PFS: File Function Menu is on the screen. If it's not, press **ESC**. Then remove the data disk from the drive and return it to its protective jacket. If no one else wants to use the computer, turn it off. Store the data disk in a safe place.

File Functions

The six functions on the PFS: File Function Menu are briefly explained below. The explanations use as an example a simple file named Friends, which contains only the name, address, and phone number of people you know.

DESIGN FILE

DESIGN FILE allows you to set up a new file on a disk. You do this by naming categories of information you want in the file and the amount of space to allot for each category. In the Friends file, these categories are named Name, Address, and Phone Number.

ADD

You use ADD to place new forms in a file. In the Friends file, you would add a new form whenever you want to add a new person to the file. However, if you just want to change information already in the file, you would use the SEARCH/UPDATE function.

COPY

COPY allows you to copy forms from one disk to another. For example, you might want to create a new file of information about relatives only. Use Copy Design Only to copy the Friends file design onto the new disk, then Copy Selected Forms to copy forms with information about Relatives.

SEARCH/UPDATE

SEARCH and UPDATE are two functions rolled into one. SEARCH helps you find specific information. For example, you might want a friend's phone number. UPDATE helps you change data. For example, you might want to change the address of a friend who's moved.

PRINT

PRINT lets you print out information. You tell the computer what information you want, and how much of each form you want printed. You also specify the order in which forms should appear.

REMOVE

REMOVE lets you erase forms from the file that you no longer need. For example, you might want to remove all forms containing information about Relatives after you've copied those forms on to another disk.

Browsing Through a File and Looking for Data

Use SEARCH/UPDATE to look at the contents of a file or locate specific information. The PFS: File Function Menu should be on the screen. Then follow this procedure:

1. Select SEARCH/UPDATE by typing 4.
2. If File Name is blank or shows the name of the file in Drive 1, proceed to Step 3. Otherwise, press **TAB** and type the file name.
3. Press **CTRL-C**. (In *File*, the **CTRL-C** keys, not **RETURN**, signal the computer to begin a function. Hold down **CTRL** and press **C** anytime you want *File* to begin or continue a particular function.)
4. A Retrieve Spec will appear on the screen. (Retrieve Spec is short for Information Retrieval Specifications.)
5. You can search for specific forms by filling in the data items on the Retrieve Spec form, or you can browse by leaving it blank.
6. Whether you're browsing or searching, press **CTRL-C** to see each form.

Format for Retrieve Specs

You can search for information in many different ways. The information the computer finds can be displayed one form at a time on the screen, or together in a printout. In either case, the Retrieve Spec is the same. An example of each type of Retrieve Spec is given below.

Find exactly Garfield	Garfield
Ignore anything before Garfield	..Garfield
Ignore anything after Garfield	Garfield..
Ignore anything before or after Garfield	..Garfield..
Find anything except blank items	..
Find Garfiel followed by any character	Garfiel@
Find exactly the number 15	= 15
Find any number greater than 15	>15
Find any number less than 15	<15
Find any number between 15 and 17	= 15..17
Find anything except for Garfield	/Garfield
Find blank items	/..

Moving Around and Adding or Changing Information in a Form

Function	Keys
Continue to the next form	**CTRL-C**
Return to PFS: File Function Menu	**ESC**
Move left, right, up, or down	**Cursor keys** ← → ↑ ↓
Next data item	**TAB**
Previous data item	**APPLE-TAB**
Next page	**CTRL-N**
Previous Page	**CTRL-P**
Start of next line	**RETURN**
Erase a page	**CTRL-E**
Remove entire form	**CTRL-R**
Delete to left of cursor	**DELETE**

Print Specs

When you want to print out information, you need to tell the computer which data items on each form to print, and how it should look. This is easily done with only three symbols, X, +, and S:

Print this data item	**X**
Print this item and the next one on the same line	**+**
Sort by this item	**S**
Print as 80-column text	**T**
Print the displayed form	**CTRL-0**

Scholastic pfs®:
U.S. Government
Data Bases

Mini-Reference for *PFS: File*

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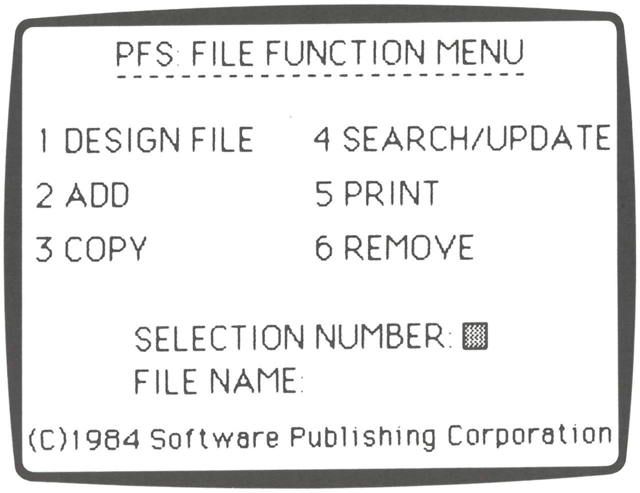
INTRODUCTION

The *Scholastic PFS: File* Mini-Reference Guide is for people who have experience with data-management programs or have completed the *Scholastic PFS: File* Learning Activities and just want a quick reference while working with *File*.

There are certain terms you need to know as you work with *File*. Three of the most important are *file, form,* and *data item.*

- A *file* is a collection of related information organized on forms and stored on a disk. Each *File* data disk can hold one file.
- A file contains *forms*. These forms are numbered consecutively. There is a separate form for each entry in your file.
- A form contains *data items.* The data item names are identical on each of the forms. You type the information that you want to store at these data items.



```
        PFS: FILE FUNCTION MENU
        -----------------------

1 DESIGN FILE      4 SEARCH/UPDATE
2 ADD              5 PRINT
3 COPY             6 REMOVE

      SELECTION NUMBER: ▩
      FILE NAME:

(C)1984 Software Publishing Corporation
```

File has six functions that appear on the PFS: File Function Menu. The name of each function describes what it does. The six *File* functions are:

1. DESIGN FILE
2. ADD
3. COPY
4. SEARCH/UPDATE
5. PRINT
6. REMOVE

This *File* Mini-Reference Guide contains an introduction to each of these functions and a series of one-page procedures for accomplishing their particular tasks.

1. DESIGN FILE is the function you use to design a new file or redesign an existing file.

2. ADD is the function you use to put your data into the forms of your file.

3. COPY is the function you use to copy the file design to a new disk; to copy selected forms from one disk to another; or to copy your entire file to another disk.

4. SEARCH/UPDATE is the function you use most often. You use it to get information out of the file and onto your screen. It allows you to update your data. Also, you can remove certain forms or blank forms from your file.

5. PRINT is the function you use with your printer in a great variety of ways. You can print a blank form, which is helpful as you collect data for your file. You can select which data items and forms will be used in your printout. If you plan to use the same print design for several printouts, you can define a Print Spec that can be used over and over.

6. REMOVE is a function that permanently erases any forms that you no longer want in your file.

GETTING STARTED WITH FILE

What You'll Need

- An Apple *IIe* or IIc computer with at least 64K memory.
- A monitor connected to the computer.
- One disk drive.
- A *File* program disk.

For some procedures you will need additional materials. These include a second disk drive, data disks, a printer, and paper for your printer.

To Start the File Program

1. Remove the *File* program disk from its protective jacket. With the label of the disk facing up, insert the disk in Drive 1. On the IIc, Drive 1 is the built-in drive. Close the door on the disk drive.
2. If the computer is off, turn it on. If the computer is already on, press three keys all at once: **CTRL**, **OPEN-APPLE**, and **RESET**. The red light on the disk drive comes on. In a few seconds the PFS: File Function Menu appears on the screen.
3. Remove the program disk from the disk drive. Put it back in its protective jacket. You won't need it again during this session at the computer.

The PFS: File Function Menu is on the screen. Most of the procedures in this Mini-Reference Guide start at this point. For further information on starting the *File* program, see page 5 in the *Scholastic PFS: File* Reference Guide.

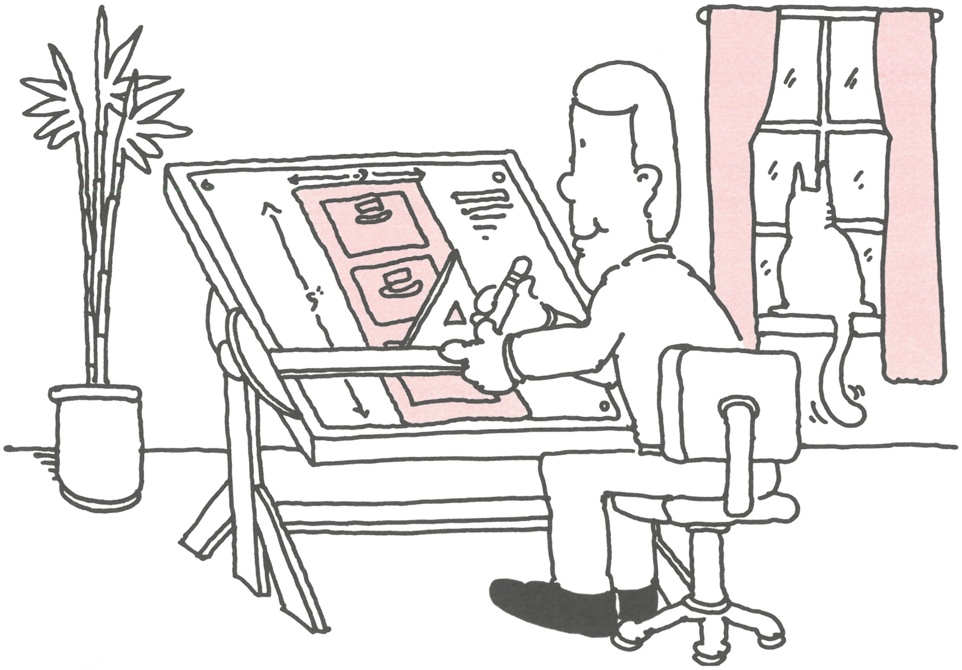
A Note About CTRL-C

You may be used to using the **RETURN** key on the Apple to signal a program that you want to continue an operation. The *File* program is different. Instead of **RETURN**, you use **CTRL-C**. That means, hold down the **CONTROL** key (or **CTRL**) and press the letter **C** at the same time.

A Note About CAPS LOCK

You may be used to pressing the **CAPS LOCK** key when you use the Apple. The *File* program is different. You can use either capital or lowercase letters.

DESIGN FILE



Creating a File

Use the Create File option when you want to create a *File* data disk.

To get ready to create a file, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Along with the materials listed, you will also need a blank disk or one that can be overwritten.

Begin with the PFS: File Function Menu on your screen. The blank disk or one that can be overwritten is in Drive 1.

1. Type the number 1 to select DESIGN FILE.
2. Press **TAB**.
3. Type a file name (one to eight characters).
4. Press **CTRL-C**. The Design File Menu appears.
5. Type the number 1 to select Create File.
6. Press **CTRL-C**. A warning appears.
7. Open the door of Drive 1 and look at the disk label. Make sure it is a blank disk or one containing information that you no longer need.
8. Press **CTRL-C**. The blank Design screen appears.
9. Type your data item names. Follow each data item name by a colon (:). Decide which data item will be used most often for retrieval, and make that the first data item on the form. Use the cursor movement keys to position the data items in the order that you want them printed out. Use **CTRL-N** to make a new page in the form. Use **CTRL-P** to see a previous page.
10. When the form is complete, press **CTRL-C**. The program stores the form. The PFS: File Function Menu appears.

For further information on creating a file, see page 15 in the *Scholastic PFS: File* Reference Guide.

Redesigning a File

Use the Change Design option to redesign a form that has already been created.

NOTE: Before you do this procedure, make a backup copy of your data disk. (See page 14.)

To get ready to redesign a file, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Additional materials you need:

- A *File* data disk.
- A blank disk or one that can be overwritten.
- A second disk drive.

Begin with the PFS: File Function Menu on your screen. The data disk containing the file to be changed is in Drive 1 and a blank disk (or one with data that you no longer need) is in Drive 2. The disk in Drive 2 will be used for temporary storage while the disk in Drive 1 is redesigned.

1. Type the number 1 to select DESIGN FILE.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. The Design File Menu appears.
5. Type 2 to select the Change Design option.
6. Press **CTRL-C**. A warning message appears.
7. Press **CTRL-C**. The form appears.
8. Type the desired changes on the page(s) of the form.

- Data item location may be changed by erasing and retyping.
- If you change a data item name, all of the data for the old name will be lost. Try to avoid these changes.
- Data items may be deleted.
- New data items may be added.

9. When the changes are complete, press **CTRL-C**.

This procedure can take a long time depending on the size of your file and the complexity of your changes. The PFS: File Function Menu appears when your file is redesigned.

For further information on redesigning a file, see page 19 in the *Scholastic PFS: File* Reference Guide.

ADD

Adding Data to a File

Use ADD to type data into a form that has already been designed. The form is automatically stored in your *File* data disk.

To get ready to add data to your file, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Along with the materials listed you will also need a *File* data disk.

Begin with the PFS: File Function Menu on your screen and your data disk in Drive 1.

1. Type 2 to select ADD.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. A blank form appears.
5. Type your data into the data items. Use **TAB** or **APPLE-TAB** to get from one data item to another. If you make a mistake, just type over the error.

If you are using a frequently-used-phrase, follow the procedure on page 10 of this guide. To erase a page of your form, follow the procedure on page 11 of this guide.

6. Press **CTRL-N** to get the next page of the form on your screen (if the form has more than one page). Type the data.
7. Press **CTRL-C** to store the completed form.
8. Repeat Steps 5–7 for as many forms as needed.
9. Press **CTRL-C** to store the last form you completed.
10. With the next blank form on your screen, press **ESC**. The PFS: File Function Menu appears.

For further information on adding data to a form, see page 21 in the *Scholastic PFS: File* Reference Guide.

Using the Frequently-Used-Phrase Option

You can store a frequently-used-phrase that might be repeated on several or all forms. *File* will automatically type the stored phrase where you want it. Only one phrase (containing 1–40 characters) may be stored at a time. Use this option when you are adding forms to a file (page 9) or updating a file (page 18).

Begin with a form on the screen.

To store a frequently-used-phrase:

1. Press **APPLE-S** (use either **APPLE** key). A prompt appears at the bottom of the screen.
2. Type the phrase you want to store.
3. Press **CTRL-C** to store the phrase or press **APPLE-ESC** to cancel whatever you just typed.

To use a stored phrase:

1. Move the cursor to the data item where you want the stored phrase to be inserted.
2. Press **APPLE-T**. *File* will type the stored phrase.

To change a stored phrase:

1. Press **APPLE-S**. A prompt appears at the bottom of the screen.
2. Type the new phrase over the old one. Use **SPACE BAR** to delete unwanted text.
3. Press **CTRL-C** to store the new phrase.

For more information on using a frequently-used-phrase, see page 24 in the *Scholastic PFS: File* Reference Guide.

Erasing a Page of a Form

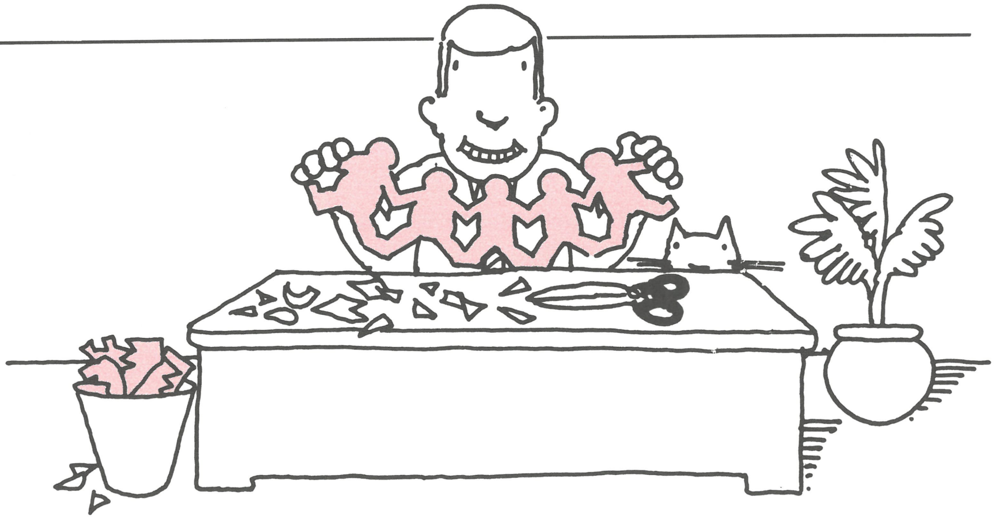
While you are working on a form, you may make some mistakes and decide you want to erase the whole page and then start over again. However, you don't want to erase the data on the other pages of the form. You can erase a page when you add data to a file (page 9) or update a file (page 18).

Begin with the page you wish to erase on the screen.

1. Press **CTRL-E**. The information will be erased, but not the data items.
2. Retype the present page with your corrections.
3. Press **CTRL-C** to store the corrected form.
4. Continue with your ADD or UPDATE procedure.

For further information on erasing a page of a form, see page 24 in the *Scholastic PFS: File* Reference Guide.

COPY



Copying the Design of Your File

Use the Copy Design Only option when you want to copy the design of a file onto another disk.

To get ready to copy the design of your file, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Additional materials you need:

- A *File* data disk and a blank disk or one that can be overwritten.
- A second disk drive.

Begin with the PFS: File Function Menu on the screen. The disk to copy *from* is in Drive 1. The disk you are copying *to* is in Drive 2.

1. Type 3 to select COPY.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. The Copy Function Menu appears.
5. Type 1 to select Copy Design Only.
6. Press **TAB** and type a name for the file that is in Drive 2. It can be the same name as the one in Drive 1, or you can choose a different name.
7. Press **CTRL-C**. A warning message appears. Make sure that the disk in Drive 2 is a blank disk or one that can be overwritten.
8. Press **CTRL-C**. After the design of the file that is in Drive 1 is copied onto the disk in Drive 2, the PFS: File Function Menu appears.
9. Remove the disk from Drive 2 and use a felt tip pen to label it with the name you gave it in Step 6.

For further information on copying the design of your file, see page 29of the *Scholastic PFS: File* Reference Guide.

Copying Selected Forms From Your File

Use the Copy Selected Forms option when you want to copy some data forms from your file to another disk.

To get ready to copy selected forms, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Additional materials you need:

- A *File* data disk and a data disk with a copy of the design of your file on it (page 12).
- A second disk drive.

Begin with the PFS: File Function Menu on the screen. The data disk you are copying *from* is in Drive 1. The disk that has a copy of the design of your file is in Drive 2.

1. Type 3 to select COPY.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. The Copy Function Menu appears.
5. Type 2 to select the Copy Selected Forms option.
6. Press **TAB** and type a name for the disk that is in Drive 2. It can be the same name as the one in Drive 1 or it can be a different name.
7. Press **CTRL-C**. A warning message appears. Make sure that the disk in Drive 2 is a blank disk or one that can be overwritten.
8. Press **CTRL-C**. A Retrieve Spec screen appears.
9. Fill in the Retrieve Spec to select desired forms for copying (page 16).
10. Press **CTRL-C**. The forms specified for printing are selected and copied onto the disk in Drive 2. Then a message appears, indicating the number of forms copied.
11. Press **CTRL-C**. The PFS: File Function Menu appears on the screen.
12. Remove the disk from Drive 2 and use a felt tip pen to label it with the name that you gave it in Step 6.

For further information on copying selected forms, see page 30 in the *Scholastic PFS: File* Reference Guide.

Copying a Whole Disk

Use the Copy Whole Diskette (called disk in this guide) option when you want to make a backup copy of your file. It is recommended that you make a backup of your *File* data disk at the end of every session.

To get ready to copy a whole disk, see Getting Started With *File,* page 6. This tells you the materials you need and how to start the *File* program. Additional materials you need:

- A *File* data disk and a blank disk or one that can be overwritten.
- A second disk drive.

Begin with the PFS: File Function Menu on the screen. The disk you are copying *from* is in Drive 1. The disk that you are copying *to* is in Drive 2.

1. Type 3 to select COPY.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. The Copy Function Menu appears.
5. Type 3 to select Copy Whole Diskette.
6. Press **TAB.** Type a name for the disk that is in Drive 2. It can be the same name as the one in Drive 1 or it can be a different name.
7. Press **CTRL-C**. A warning message appears. Check to make sure that you have a blank disk or one that can be overwritten in Drive 2.
8. Press **CTRL-C**. The copying operation takes varying amounts of time depending on the amount of data to be copied. Then a message indicating the number of forms copied will appear.
9. Press **CTRL-C**. The PFS: File Function Menu appears.
10. Take the disk out of Drive 2 and use a felt tip pen to label it with the name you gave it in Step 6.

For further information on copying a whole disk, see page 31 in the *Scholastic PFS: File* Reference Guide.

SEARCH/UPDATE

TODAY IS
MONDAY
5

Browsing Through Your File

You can review the information in a file without making any changes.

To get ready to browse through a file, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Along with the materials listed you will also need a *File* data disk.

Begin with the PFS: File Function Menu on the screen and your data disk in Drive 1.

1. Type 4 to select SEARCH/UPDATE.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. A Retrieve Spec form appears.
5. Press **CTRL-C**. The last form in the file appears.
6. Review the form, taking notes as needed.
7. Press **CTRL-C** to see the next form.
8. Repeat Steps 6 and 7 until you want to quit or you have seen all the forms. Then press **ESC** to return to the PFS: File Function Menu.

For further information on browsing through a file, see page 33 in the *Scholastic PFS: File* Reference Guide.

Designing a Retrieve Spec

You can use the Retrieve Spec form to tell *File* which forms you want selected from your data disk. On the Retrieve Spec form, you type the rules for selecting forms. You can select forms by using codes that specify an exact match, partial match, a range of numbers, greater than a number, and less than a number. Also, you can make specifications for as many data items as you wish.

You use a Retrieve Spec when you use the COPY, SEARCH/UPDATE, PRINT, and REMOVE functions.

Begin with a Retrieve Spec form on the screen.

1. Use the **TAB** key to get the cursor to the data item(s) to be used for your selection rules.
2. Type your rules according to the codes below:

Exactly this	Garfield
Ignore anything in front	. . Garfield
Ignore anything after	Garfield . .
Ignore anything before/after	. . Garfield . .
Anything except a blank item	. .
A blank item	/ . .
Anything in the @ position	Garfiel@
Anything that is not this	/Garfield /15
Exactly this number	= 15
Any number greater than this	>15
Any number less than this	<15
Any number between these two	= 15 . . 17

3. Press **CTRL-C**. Continue with your ADD, SEARCH/UPDATE, PRINT, or REMOVE procedure.

For further information on setting up a Retrieve Spec, see page 34 in the *Scholastic PFS: File* Reference Guide.

Searching Through Your File

You can use *File* to search for certain forms in your data disk.

To get ready to search through your file, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Along with the materials listed, you will also need a *File* data disk.

Begin with the PFS: File Function Menu on the screen and your data disk in Drive 1.

1. Type 4 to select SEARCH/UPDATE.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. A Retrieve Spec form appears.
5. Use the **TAB** key to get the cursor on the data item(s) to be used for your selection rules.
6. Type your selection rules for the forms you want to review. (For guidelines, see page 16.)
7. Press **CTRL-C**. The first form that matches your selection rules appears.

To print this form exactly as it appears on the screen, follow the procedure on page 22.

8. Press **CTRL-C** when you want to see the next form that matches your selection rules.
9. Repeat Step 8 until a message indicating the number of forms found appears.
10. Press **CTRL-C**. The PFS: File Function Menu appears.

For further information on searching for certain forms in your file, see page 32 in the *Scholastic PFS: File* Reference Guide.

Updating Your File

You can change or add to the data items of your forms.

To get ready to update your file, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Along with the materials listed, you will also need a *File* data disk.

Begin with the PFS: File Function Menu on the screen and your data disk in Drive 1.

1. Type 4 to select SEARCH/UPDATE.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. A Retrieve Spec form appears.
5. Type the selection rules for the files you want to update. (For guidelines, see page 16.)
6. Press **CTRL-C**. The first form that matches your selection rules appears.
7. Use the **TAB** key to get the cursor on the data item that you want to update. Type the information.

To erase a page of the form, follow the procedure on page 11 of this guide.

8. Repeat Step 7 for all the data items you want to change on that form.
9. Press **CTRL-C** to save the updated form. The next form you selected will appear on the screen.
10. Repeat Steps 7 – 9 until the message ''Forms found: #'' appears.
11. Press **CTRL-C.** The PFS: File Function Menu appears.

For more information on updating your file, see page 39 in the *Scholastic PFS: File* Reference Guide.

Removing Forms From Your File

You can remove unwanted forms from your file. The safest way is to use the SEARCH/UPDATE function to look at the form and then remove it.

To get ready to remove a form from a file, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Along with the materials listed, you will also need a *File* data disk.

Begin with the PFS: File Function Menu on your screen. Your data disk is in Drive 1.

1. Type 4 to select SEARCH/UPDATE.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. The Retrieve Spec form appears.
5. Type the selection rules for the form(s) you want to remove. (For guidelines, see page 16.)
6. Press **CTRL-C**. The first form that matches your Retrieve Spec appears on the screen.
7. Read over the form and decide whether or not you want to remove it permanently from the file.
8. Press **CTRL-R**. A warning message appears.
9. To remove the form, press **CTRL-C**. To avoid removing the form, press **RETURN**.

The next form that matches your Retrieve Spec appears.

10. Press **CTRL-C**. The PFS: File Function Menu appears on the screen.

For more information on removing forms from your file, see page 40 in the *Scholastic PFS: File* Reference Guide.

Removing Blank Forms From Your File

You can accidentally save a blank form in your file. This can alter your printouts. Follow this procedure to remove any unwanted blank forms.

To get ready to remove blank forms from your file, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Along with the materials listed you will also need a *File* data disk.

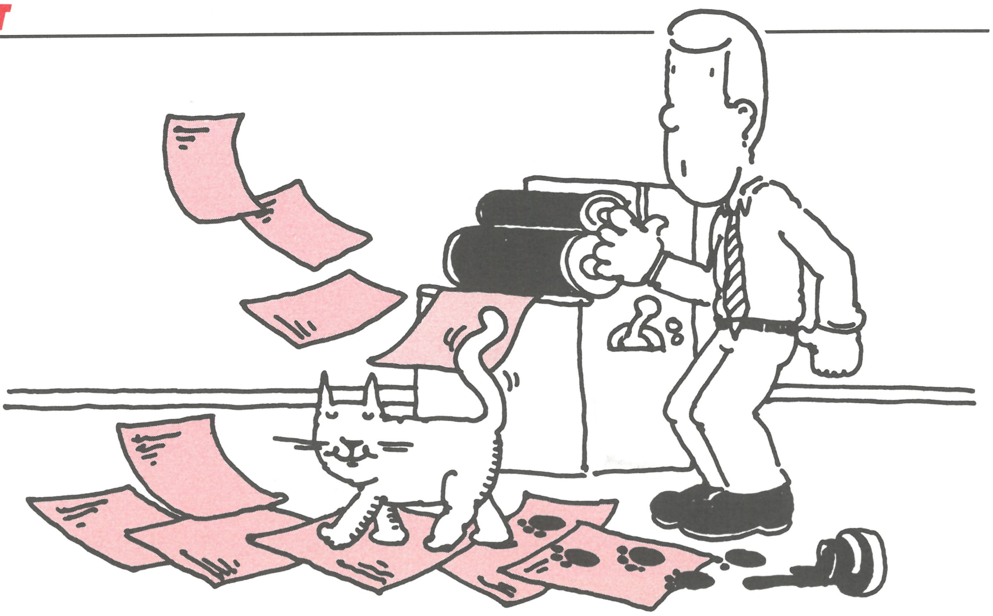
Begin with the PFS: File Function Menu on the screen. Your data disk is in Drive 1.

1. Type 4 to select SEARCH/UPDATE.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. The Retrieve Spec form appears.
5. Move the cursor to the first and/or main data item. (Each form should have data entered for this item.)
6. Type / . . after this data item.
7. Press **CTRL-C**. *File* will search for any forms that are blank for this item.
8. Read over the form and make sure that it is blank and that you want to remove it permanently from your file.
9. Press **CTRL-R**. A warning message appears.
10. To remove the form, press **CTRL-C**. To avoid removing the form, press **RETURN**.

The next form that is blank for the selected data item appears.

11. Repeat Steps 8 – 10 until the message ''Forms found: #'' appears.
12. Press **CTRL-C.** The PFS: File Function Menu will appear on your screen.

For more information on removing blank forms from your file, see page 40 in the *Scholastic PFS: File* Reference Guide.



Printing a Blank Form

You can print blank forms that list your data items. You can use these forms to collect the data that you want to add to your file.

To get ready to print a blank form, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Additional materials you need:

- A *File* data disk.
- A printer with paper.

Begin with the PFS: File Function Menu on the screen. Your data disk is in Drive 1 and a printer is properly connected to the computer.

1. Type 2 to select ADD.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. A blank form appears.
5. Press **CTRL** and the letter **O** at the same time. The Print Options Menu appears.
(For guidelines, see page 26.)
6. The Pre-defined Print Spec should be blank.
7. Type Y for Print Item Names.
8. Type Y or N for Add Linefeed Characters.
9. Type 22 for the Lines Per Page option.
10. Type the number of blank forms you want for the Number of Copies option.
11. Type Y or N for the Pause Between Pages option.
12. If you have printer control codes, type them. Otherwise, leave this option blank.
13. Check to see that paper is positioned in the printer and that it is turned on.
14. Press **CTRL-C**. The printing begins.
15. Press **ESC** when the printing is complete. The PFS: File Function Menu will appear on the screen.

For further information on printing a blank form, see page 25 in the *Scholastic PFS: File* Reference Guide.

Printing a Single Form

You can print a single form in your file exactly as it appears on your screen. You can use these forms to collect data that you are missing for forms already in your file.

To get ready to print a single form, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Additional materials you need:

- A *File* data disk.
- A printer with paper.

Begin with the form you want to print on the screen.

(To do this, follow Steps 1 – 7 in the Searching Through Your File procedure on page 17 of this guide.) Your data disk is in Drive 1 and a printer is properly connected to the computer.

1. Press **CTRL** and the letter **O**. The Print Options Menu appears. (For guidelines, see page 26.)
2. The Pre-defined Print Spec should be blank.
3. Type Y for Print Item Names.
4. Type Y or N for Add Linefeed Characters.
5. Type 22 for the Lines Per Page option.
6. Type the number 1 for Number of Copies option.
7. Type Y or N for Pause Between Pages option.
8. If you have printer control codes, type them. Otherwise leave this option blank.
9. Check to see that paper is positioned in the printer and that it is turned on.
10. Press **CTRL-C**. The printing of your form begins.
11. Press **ESC** when the printing is complete. The PFS: File Function Menu will appear.

For further information on printing a single form, see page 25 in the *Scholastic PFS: File* Reference Guide.

Printing Without a Pre-defined Print Spec

You can design a printout of your file data. This procedure lets you specify your print design for one printout only. (To define a Print Spec that you can use and save, see page 24 in this guide.)

To get ready to print without a Pre-defined Print Spec, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Additional materials you need:

- *File* data disk.
- A printer with paper.

Begin with the PFS: File Function Menu on the screen. Your data disk is in Drive 1 and a printer is properly connected to the computer.

1. Type 5 to select PRINT.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. The Print Menu appears.
5. Type the number 1 to select Print Forms.
6. Press **CTRL-C**. A Retrieve Spec appears.
7. Type your selection rules. (For guidelines, see page 16.)
8. Press **CTRL-C**. The Print Options Menu appears.
9. The Pre-defined Print Spec should be blank. If not, use the **SPACE BAR** to clear it.
10. Check to make sure the other Print Options are set the way you want them. (For guidelines, see page 26.)
11. Press **CTRL-C**. A Print Spec screen appears.
12. Press **TAB** to move the cursor to the data items to be printed. Type your Print Spec codes. (For guidelines, see page 24.)
13. Press **CTRL-C** and the printing begins.
14. Press **ESC** to stop the printing or to return to the PFS: File Function Menu when the printing is complete.

For more information on printing without a Pre-defined Print Spec, see page 49 in the *Scholastic PFS: File* Reference Guide.

Defining a Pre-defined Print Spec

A Print Spec is a blank form on which you type special codes that tell the program how to design a printout. *File* will store these printouts on your data disk.

To get ready to define a Pre-defined Print Spec, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Along with the materials listed, you will also need a *File* data disk.

Begin with the PFS: File Function Menu on the screen and your data disk in Drive 1.

1. Type 5 to select PRINT.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. The Print Menu appears.
5. Type 2 to select Define Print Spec.
6. Press **CTRL-C**. The Current Pre-defined Print Spec Menu appears.
7. Type a Print Spec name.
8. Press **CTRL-C**. The Print Spec form appears.
9. Use **TAB** to move the cursor to the data items to be printed. Type the Print Spec codes (×, +, S, or T) in the data item names.

Print Spec Selection Rules

×	print the data then advance to the next line
+	print the data and move over two spaces
S	sort the forms based on this item
T	treat this data as text

10. When finished, press **CTRL-C** to store the Print Spec. The PFS: File Function Menu appears.

NOTE: Each File *data disk can hold up to eight Pre-defined Print Specs. To remove an unwanted Print Spec, press* ***CTRL-R*** *while the unwanted Print Spec is on the screen.*

For more information on defining a Pre-defined Print Spec, see page 44 in the *Scholastic PFS: File* Reference Guide.

Printing With a Pre-defined Print Spec

You can print selected data from your file by using a Pre-defined Print Spec.

To get ready to print with a Pre-defined Print Spec, see Getting Started With *File,* page 6. This tells you the materials you need and how to start the *File* program. Additional materials you need:

- A *File* data disk.
- A printer with paper.

Begin with the PFS: File Function Menu on the screen. Your data disk is in Drive 1 and a printer is properly connected to the computer.

1. Type 5 to select PRINT.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. The Print Menu appears.
5. Type the number 1 to select Print Forms.
6. Press **CTRL-C**. A Retrieve Spec appears.
7. Type your selection rules for the files you want to print. (For guidelines, see page 16.)
8. Press **CTRL-C**. The Print Options Menu appears.
9. Type the name of your Pre-defined Print Spec. Press **TAB**. Make any needed changes in the Print Options Menu. (For guidelines, see page 26.)
10. Check to see that paper is positioned in the printer and that it is turned on.
11. Press **CTRL-C** to start the printing.
12. Press **ESC** to stop the printing or to return to the PFS: File Function Menu when the printing is complete.

For more information on printing forms with a Pre-defined Print Spec, see page 42 in the *Scholastic PFS: File* Reference Guide.

Setting the Print Options

The Print Options Menu is used to tell *File* how to print your data. Some of the options are automatically filled into the program as defaults. In some cases you can simply accept the defaults; in other cases you need to change them. Use this procedure when you are getting ready to print (pages 23 and 25).

Begin with the Print Options Menu on the screen.

1. Use the **TAB** key to move the cursor to each option you want to change. Type the change.

The Print Options

Pre-defined Print Spec: Type the name of your Pre-defined Print Spec to be used in this printout. If you leave this option blank, the program will give you a chance later to fill in a Print Spec form.

Print Item Names: Type Y if you want to print each item name along with the data. Type N to print the data only.

Add Linefeed Characters: Type Y to add a linefeed character to the end of each line of data printed, causing the printer to advance to the next line. Type N if your printer skips to the next line automatically.

Lines Per Page: This option specifies the number of lines you want between the first line of one form and the first line of the next form. Generally, the number 22 works well. If there are too many spaces between your forms, try 11 or 6. If you want a separate form on each printed page, use 66.

Number of Copies: Specify how many times you want the data items from each form to be printed.

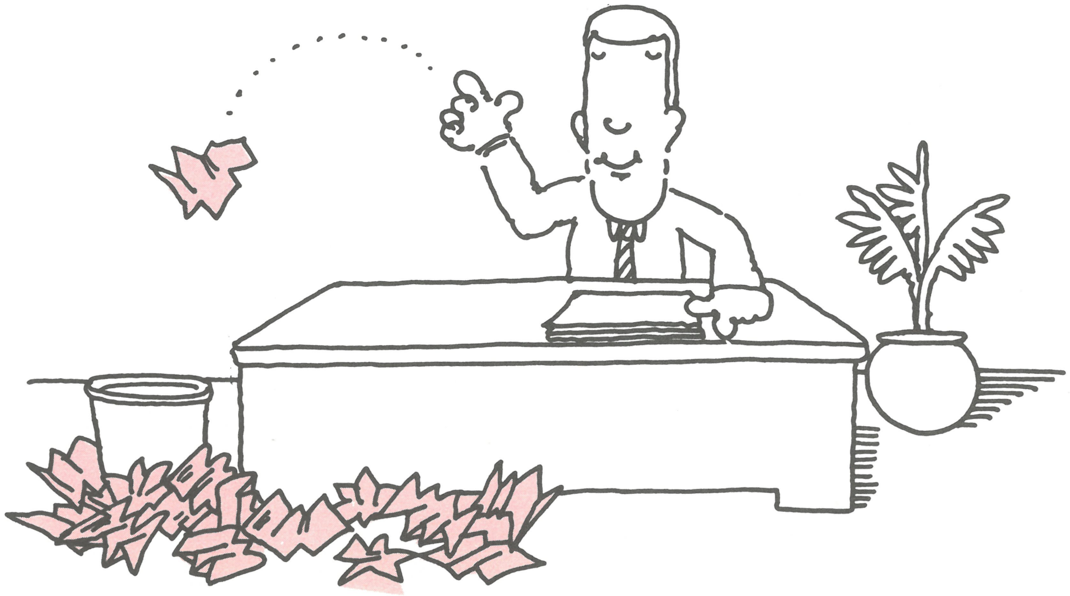
Pause Between Pages: Type Y if you are using single sheet paper. If you are using continuous–form paper, type N.

Printer Control Codes: This option allows you to specify decimal codes to be sent to the printer to change the type style. See your printer manual for these codes.

2. Press **CTRL-C**. Continue with your printing procedure.

For further information on setting the Print options, see page 47 in the *Scholastic PFS: File* Reference Guide.

REMOVE



Removing Files

You can use the REMOVE function to permanently erase forms from your file that you no longer need.

CAUTION: REMOVE may permanently erase forms that you do not want to lose because you cannot review a form before it is deleted. It's safer instead to use the procedures to remove forms in the SEARCH/UPDATE function (pages 19 and 20).

To get ready to use the REMOVE function, see Getting Started With *File*, page 6. This tells you the materials you need and how to start the *File* program. Along with the materials listed you will also need a *File* data disk.

Begin with the PFS: File Function Menu on the screen and your data disk in Drive 1.

1. Type 6 to select REMOVE.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. The Retrieve Spec form appears.
5. Type the selection rules for the forms you want to remove. (For guidelines, see page 16.)
6. Press **CTRL-C**. A warning message appears telling you that selected forms are about to be removed.
7. Press **CTRL-C**. A message appears that the forms have been removed.
8. Press **CTRL-C**. The PFS: File Function Menu appears.

For further information on removing forms, see page 50 in the *Scholastic PFS: File* Reference Guide.

Scholastic pfs®: U.S. Government Data Bases

Mini-Reference for *PFS: Report*

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INTRODUCTION

Scholastic PFS: Report is a program that prepares printed reports in the form of columns. Use data files that you have previously created with *PFS:File*.

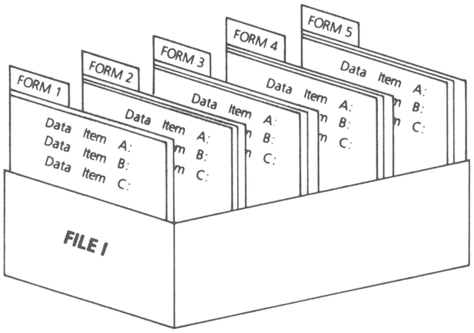
The *Scholastic PFS: Report* Mini-Reference Guide is for those who have experience with data management programs or have completed the *Report* Learning Activities and are looking for a quick way to work with *Report*.

There are certain terms you need to know as you work with *Report*. Three of the most important are *file, form*, and *data item*.

A *file* is a collection of related information organized and stored on a disk. Each *File* data disk holds one file.

A file contains *forms*. These forms are numbered consecutively. There is a separate form for each entry in your file.

A form contains *data items*. Each data item name is identical on each of the forms. Type the information that you want to store next to each data item.



Report has three functions that appear on the PFS: Report Menu. The name of each function describes what it does. The three *Report* functions are:

1. PRINT A REPORT
2. PRE-DEFINE A REPORT
3. SET NEW HEADINGS

This *Report* Mini-Reference Guide contains an introduction to each of these functions and a series of one-page procedures for accomplishing their particular tasks.

1. PRINT A REPORT is the function you use to tell the program which forms to select for your report, the title of your report and how you want the report to be printed. PRINT A REPORT also lets you preview the report on the screen. It is best to use this function after you have pre-defined a report and set new headings.
2. PRE-DEFINE A REPORT is the function you use to design your report. With this function you can save eight different report designs in your file to use when a report is printed.
3. SET NEW HEADINGS is the function that allows you to set new column headings for reports.

GETTING STARTED WITH REPORT

What You'll Need

- An Apple *IIe* or IIc computer with at least 64K memory.
- A monitor.
- Two disk drives.*
- A *Report* program disk.
- A Sortwork disk.
- Your *File* data disk(s).
- A printer connected to the computer.
- Paper for your printer.

*Using Report With One Disk Drive

You can define your report using a single disk drive, but you need two drives while printing to use all of *Report*'s features. If you do print a report using one drive, the limitations and remaining features are:

- The data cannot be sorted. Information in the rows can be reported only in the order in which the forms were stored in the file.
- Only seven vertical columns are available. Columns 1 and 2 (the sorted columns) cannot be used.
- The program will not perform most computations on the data.
- Totals, averages, counts, and some derived columns are still available.

To Load the Report Program

1. Remove the *Report* program disk from its protective jacket. With the label of the disk facing up, insert the disk in Drive 1. On the IIc, Drive 1 is the built-in drive. Close the door on the disk drive.

2. If the computer is off, turn it on. If the computer is already on, press three keys all at once: **CTRL**, **OPEN APPLE**, and **RESET**. The red light on the disk drive comes on. In a few seconds the PFS: Report Menu appears on the screen.

3. Remove the program disk from the disk drive. Put it back in its protective jacket. You won't need it again during this session at the computer.

4. Remove your *File* data disk from its protective jacket. Insert the disk in Drive 1. Close the door on the disk drive.

5. Remove the Sortwork disk from its protective jacket. Insert the disk in Drive 2. Close the door on the disk drive. The PFS: Report Menu is on the screen.

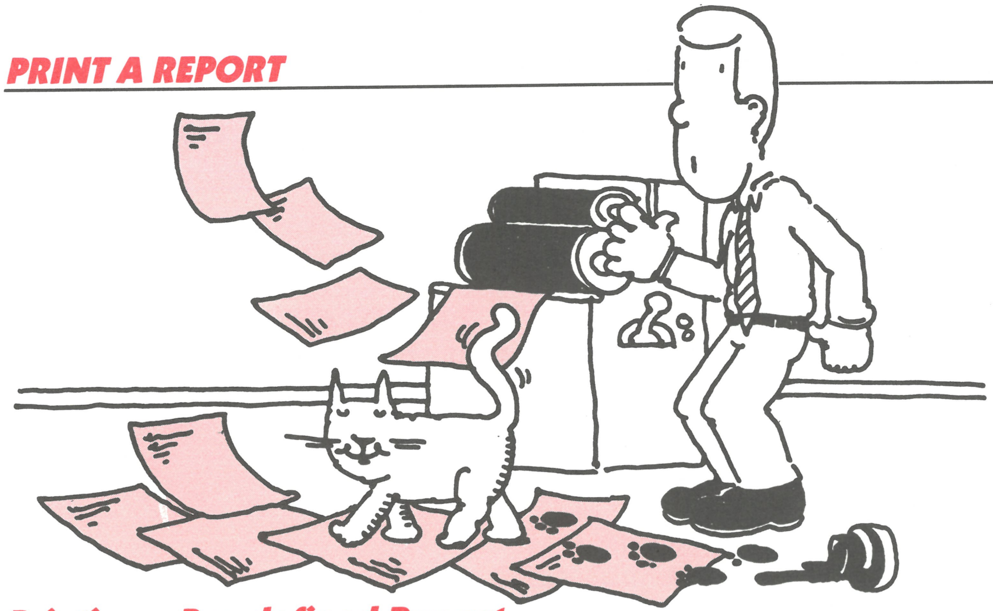
A Note About CTRL-C

You may be used to using the **RETURN** key on the Apple to indicate that you want to continue an operation. The *Report* program is different. Instead of pressing **RETURN**, you use **CTRL-C**. This means to hold down **CTRL** (**CONTROL**) and press the letter **C** at the same time.

A Note About CAPS LOCK

You may be used to pressing the **CAPS LOCK** key when you use the Apple. The *Report* program is different. You can use either capital or lowercase letters.

PRINT A REPORT



Printing a Pre-defined Report

You can use *Report* to produce a wide variety of lists that contain information for many different purposes. You can print selected data from your file by using a Pre-defined Report Spec. Once you have pre-defined a report, you can use it over and over by following this procedure.

To get ready to print with a Pre-defined Report Spec, see Getting Started With *Report*, page 6. This tells you the materials you need and how to load the *Report* program.

To begin, the PFS: Report Menu is on the screen. Your *File* data disk is in Drive 1 and the Sortwork disk is in Drive 2. If you want a printout of your report, you need a printer connected to your computer.

1. Pre-define your report (see page 12).
2. Set your headings (see page 20).
3. Type the number 1 to select PRINT A REPORT.
4. Press **TAB**.
5. Type the name of the file that is in Drive 1.
6. Press **CTRL-C**. A Retrieve Spec form appears.
7. Type your selection rules for the files you want to print. (For guidelines, see page 9.)
8. Press **CTRL-C**. The Report Options Menu appears.
9. Type the name of your Pre-defined Report. Press **TAB**. Make any needed changes on the Report Options Menu. (For guidelines, see page 10.)
10. If you want a printout of your report, check to see that paper is positioned in the printer and that it is turned on. If you are previewing your report on the screen, go on to the next step.
11. Press **CTRL-C**. *Report* begins selecting and sorting forms for printing. After this, the printing begins, either on the screen or the printer.

NOTE: You may get an error message telling you that your report is too wide. See Reports That Are Too Wide on page 11.

12. When the printing is complete, the PFS: Report Menu appears.

For further information on printing a pre-defined report, see page 16 in the *Scholastic PFS: Report* Reference Guide.

Printing Without a Pre-defined Report Design

You can design a report without using a pre-defined report design. This procedure lets you specify your report design for the current printout only. (To design a report that you can use over and over, follow the procedure on page 7.)

To get ready to print without a pre-defined report design, see Getting Started With *Report*, page 6. This tells you the materials you need and how to load the *Report* program.

To begin, the PFS: Report Menu is on the screen. Your *File* data disk is in Drive 1 and your Sortwork disk is in Drive 2. If you want a printout of your report, you need a printer connected to your computer.

1. Set your headings (see page 20).
2. Type the number 1 to select PRINT A REPORT.
3. Press **TAB**.
4. Type the name of the file that is in Drive 1.
5. Press **CTRL-C**. A Retrieve Spec form appears.
6. Type your selection rules for the files you want to print. (For guidelines, see page 9.)
7. Press **CTRL-C**. The Report Options Menu appears.
8. The Pre-defined Report option should be blank. Press **TAB**. Make any needed changes on the Report Options Menu. (For guidelines, see page 10.)
9. Press **CTRL-C**. A blank Report Spec appears.
10. Press **TAB** to move the cursor to the data items to be printed. Type your formatting codes. (For guidelines, see page 12.)
11. If you want a printout of your report, check to see that paper is positioned in the printer and that it is turned on. If you are previewing your report on the screen, go on to the next step.
12. Press **CTRL-C**. *Report* begins selecting and sorting forms for printing. After this, the printing begins, either on the screen or the printer.

NOTE: You may get an error message telling you that your report is too wide. See Reports That Are Too Wide on page 11.

13. When the printing is complete, the PFS: Report Menu appears.

For further information on printing without a pre-defined report design, see page 29 in the *Scholastic PFS: Report* Reference Guide.

Designing a Retrieve Spec

You can use the Retrieve Spec form to tell *Report* which forms you want selected from your data disk. You can use all the forms from your file in your report, or you can select certain ones. On the Retrieve Spec form, you type the rules for selecting forms. You can select forms with an exact match, partial match, an anything except match, a range of numbers, greater than a number, and less than a number. Also, you can make specifications for as many data items as you wish.

To begin, a Retrieve Spec form is on the screen.

1. Use the **TAB** key to get the cursor to the data item(s) to be used for your selection rules. If you want to use all the forms in your report, go to Step 3.
2. Type your rules according to the guidelines below:

Exactly this	Garfield
Ignore anything in front	. . Garfield
Ignore anything after	Garfield . .
Ignore anything before/after	. . Garfield . .
Anything except a blank item	. .
A blank item	/ . .
Anything in the @ position	Garfiel@
Anything that is not this	/Garfield /15
Exactly this number	= 15
Any number greater than this	>15
Any number less than this	<15
Any number between these two	= 15 . . 17

3. Press **CTRL-C**. Continue with your *Report* procedure.

For further information on setting up a Retrieve Spec, see page 18 in the *Scholastic PFS: Report* Reference Guide.

Setting the Report Options

The Report Options Menu is used to type a title for the report and specify how you want the report printed. Some of the options are automatically filled in, placed in the program as *defaults*. The default values are the ones most commonly used. In some cases you can simply accept the defaults. In other cases you need to change them. Use this procedure when you are getting ready to print a report.

To begin, the Report Options Menu is on the screen.

1. Use the **TAB** key to move the cursor to each option you want to change. (Use **APPLE-TAB** to move backward.) Type the change according to the guidelines below.

Title: Type the report title. The title will be centered at the top of every printed page.

Pre-defined Report Names: Type the name of the pre-defined report to be used in this printout. If you leave this option blank, the program will give you a chance later to fill in a Report Spec form.

Lines Per Page: *Report* assumes you are using 11-inch long paper, which has 66 lines per page. Unless you are using nonstandard paper, leave this default alone.

Page Width: *Report* assumes your pages are 8½ inches wide. Unless you are using nonstandard paper, leave this default alone.

Printer Device: You can preview what your report will look like by viewing it on the screen before printing it on paper. Typing the letter D (for Display) lets you preview the report on the screen. If you have already previewed the report, type P (for Printer).

Add Linefeed Characters: Typing Y to this option adds a linefeed character to the end of each line of data printed, causing the printer to advance to the next line. Type N if your printer does this automatically.

Pause Between Pages: Type Y if you are using single-sheet paper. If you are using continuous-form paper, type N.

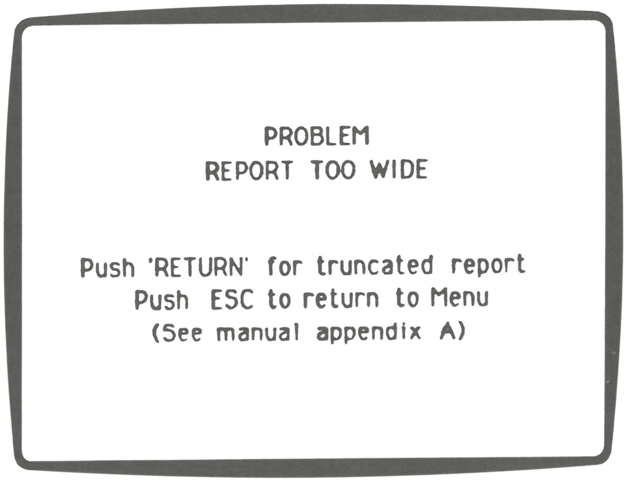
Printer Control Codes: This option allows you to specify decimal codes to be sent to the printer to change the type style. For example, you may want to use boldface characters. See your printer manual for these codes.

2. Press **CTRL-C**. Continue with your printing procedure.

For further information on setting the report options, see page 27 in the *Scholastic PFS: Report* Reference Guide.

Reports That Are Too Wide

Most standard printers will print up to 80 characters on a line. You may design a report that is wider than 80 columns. If you do so, you will get the following error message on your screen:



```
PROBLEM
REPORT TOO WIDE

Push 'RETURN' for truncated report
Push  ESC to return to Menu
(See manual appendix A)
```

Report gives you a choice. You can press **RETURN** for a truncated report. This means that only the first 80 characters of each line will be printed.

If you prefer to redesign your report so that all your data will be printed, press **ESC**. You can do the following:

- Use the PRINT A REPORT option and display your report on the screen. Follow the procedure on page 7 or 8. See how much of your report will fit. Check to see if any of your headings can be shortened.
- To shorten your headings, see page 20.
- If there is simply too much data for the report, you may want to divide the data into two separate reports. To design these new reports, see page 12.

PRE-DEFINE A REPORT

Designing a Report Spec

Use the PRE-DEFINE A REPORT function to create and save a Report Spec. You can create and save up to eight different designs for each file.

To get ready to design a Report Spec, see Getting Started With *Report*, page 6. This tells you the materials you need and how to load the *Report* program.

To begin, the PFS: Report Menu is on the screen. Your *File* data disk is in Drive 1 and the Sortwork disk is in Drive 2.

1. Type 2 to select PRE-DEFINE A REPORT.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. A list of pre-defined reports for that file appears on the screen.
5. Type a name for the new pre-defined report (one–eight characters). Select a name that describes what will be in the report.
6. Press **CTRL-C**. A blank Report Spec form appears.
7. Press **TAB** to get the cursor to the data item you want to be printed in column 1. Type the number 1.
8. Press **TAB** or **APPLE-TAB** to get the cursor to the data item you want to be printed in column 2. Type 2.
9. Continue filling in column numbers on the form, for as many data items as you plan to include in the report (up to 9). You can further format your report by doing the following:

- To have alphabetical or numeric sorting in your report, see Setting Up Columns for Sorting on page 13.
- To use totals, averages, and subaverages in your report, see Reports With Column Calculations on page 14.
- You can use derived columns in your report by following the procedure on page 15.
- If you want a quick way to use the same phrase while designing your report, see Using the Frequently-Used-Phrase Option on page 16.
- To use key words in your report, follow the procedure on page 17.

10. When the Report Spec is the way you want it, press **CTRL-C**. *Report* saves the spec on the data disk. The PFS: Report Menu appears.

For further information on designing a Report Spec, see page 32 in the *Scholastic PFS: Report* Reference Guide.

Setting Up Columns for Sorting

Each report can have up to nine columns. You can specify what information will appear in a column by giving each data item a number from 1 to 9. The columns appear in the order you give them, from left to right. When the Report Spec is on the screen, place the desired number next to the data item names that you want to appear in your report.

Report has sorting features for the first two columns. First, it puts the data items in column 1 in alphabetical or numeric order. To sort a data item this way, be sure you place it in the first column. If there are identical data items in column 1, *Report* then sorts the data according to the information in column 2.

Numeric Sorts

If you want *Report* to treat a data item numerically, type **N** beside the column number. *Report* considers the numeric data in the following way:

- Numbers are sorted from highest to lowest.
- Numerical characters are +, −, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0. All other characters, including spaces, are ignored.
- A minus (−) sign gives the number a negative value.
- All but the first decimal points (.) are ignored.
- Commas are inserted.
- If any one of the data items in the column has decimal places, all data items in the column are adjusted to have the same number of decimal places.

Additional Sorting Considerations

- It is important to place the letter **N** next to your numeric data items. If you don't, *Report* will treat the number as a character string. For example, just as *Report* will sort the following words alphabetically, a character sort of numbers would use the same system.

Character Sorts		**Numeric Sort**
a	1	1
at	17	17
bat	209	25
be	25	47
card	3463	209
do	47	3463

- If dates are to be sorted, they are best entered in the following format: YY/MM/DD.

Nonsorted Reports

If you don't want your report sorted, then do not use columns 1 and 2 in your report. Instead, only use columns 3 to 9 and *Report* will print your information in the order that it appears in your file.

Page-Break Sorts

If you want to specify a page-break, type P beside column 1 on the Report Spec. *Report* will start a new page every time the data in column 1 changes.

For further information on setting up columns for sorting, see page 34 in the *Scholastic PFS: Report* Reference Guide.

Reports With Column Calculations

Report can total, count, or average numbers in a column. Subtotals, subcounts, and subaverages can be printed every time the data item in column 1 changes. You can specify these calculations by typing the following characters in the selected columns:

T	*Report* adds all the numbers in the column, and prints the **total** at the end of the report.
ST	This will print a **subtotal** every time the data item in column 1 changes, and a total at the end of the report.
A	*Report* prints the **average** of all the numbers in the column at the end of the report.
SA	This will print a **subaverage** every time the data item in column 1 changes, and an overall average at the end of the report.
C	*Report* will **count** all individual data items printed in a column and print the result at the end of the report.
SC	This will print a **subcount** every time the data item in column 1 changes, and a complete count at the end of the report.

Report can perform more than one calculation in a column. For example, it can both total and average the data items in a column.

Blanks and Zeros

If you plan to perform mathematical calculations with data items, you must consider the difference between a blank and a zero. A blank has no mathematical value and cannot be counted as an item in a column. This is important if you are averaging numbers. So, if you want to average a column, be sure you have zeros, not blanks, where you want them counted.

For further information on reports with column calculations, see page 37 in the *Scholastic PFS: Report* Reference Guide.

Reports With Derived Columns

A *derived column* is a column that gets its data by calculating information in other columns of a report rather than directly from the data file. Up to three columns can be derived for one report.

To begin, the Report Spec form is on your screen.

1. Press **CTRL-D**. The Derived Columns screen appears.
2. Type the heading you want for this column. If you leave this heading blank, *Report* will print the formula as the column heading.
3. Press **TAB** to move the cursor to FORMULA. Type the formula you wish to use to derive the column.

- Columns in the formula are identified by # followed by the column number.
- To tell *Report* what calculations to perform, use a combination of the numbers and the following mathematical operators:

+	add
–	subtract
*	multiply
/	divide
( )	indicates that the calculation within the parentheses should be done before others in the formula.

- *Report* evaluates the formula from left to right, evaluating the expressions within parentheses first.

4. Press **TAB** to move the cursor to REPORT SPEC. Type the column number for this derived column. Also, type the codes you want to use if you want totals or averages for this column.
5. When your Derived Column is complete, press **CTRL-D**. The Report Spec form appears.
6. Continue filling in your Report Spec. When the Report Spec form is complete, press **CTRL-C**. The Report Spec is saved and the PFS: Report Menu appears.

For further information on reports with derived columns, see page 40 in the *Scholastic PFS: Report* Reference Guide.

Using the Frequently-Used-Phrase Option

While you are defining Report Specs, you can store a frequently-used-phrase that might be repeated in several locations of your report. The stored phrase can then be typed by *Report* when needed. For example, you might want to use the same formula for a derived column in several different reports. You would store the formula only once, and then have *Report* type it on each Derived Column Spec.

Begin with a Retrieve Spec, a Report Spec, or Derived Columns screen.

To store a frequently-used-phrase:

1. Press **APPLE-S** (use either Apple key). A prompt appears at the bottom of the screen.
2. Type the phrase you want to store.
3. Press **CTRL-C** to store the phrase, or press **APPLE-ESC** to cancel whatever you just typed.

NOTE: You can only store one phrase at a time.

To use a stored phrase:

1. Move the cursor to the data item where you want the stored phrase to be inserted.
2. Press **APPLE-T**. *Report* will insert the stored phrase.

To change a stored phrase:

1. Press **APPLE-S**. A prompt appears at the bottom of the screen.
2. Type the new phrase over the old one. Use the **SPACE BAR** to delete any unwanted text.
3. Press **CTRL-C** to store the new phrase.

For further information on using the Frequently-Used-Phrase option, see page 44 in the *Scholastic PFS: Report* Reference Guide.

Reports Using Key Words

When you store information in the form of text in your file, you may want to identify such information by means of subject key words. You can identify the same form by several different key words if it is of interest for several different reasons.

To identify text using key words, create an item on your file form to contain your key words. When you enter more than one key word into an item, separate each with a space. If you have a key word that is really more than one word, either do not space between the words (PersonalComputers) or use a hyphen (Personal-Computers).

To print a report using key words, make the item containing your key words column 1 of the report and enter K as part of the report specifications for the item. (The K specification only works for column 1.) *Report* then prints the report, sorted alphabetically by key word, with each form appearing once for every key word listed.

Note that processing a key word report can be a fairly time-consuming task, depending on the complexity of your file and the number of key words entered for each form.

To use key words in your report, begin with the Report Spec on the screen.

1. Use **TAB** to move the cursor to the data item name containing your key words. Type the number 1 and the letter K (1K) to sort the column of your report by key words.
2. Continue filling in your Report Spec. When the Report Spec form is complete, press **CTRL-C**. The Report Spec is saved and the PFS: Report Function Menu appears.

For further information on reports using key words, see page 45 in the *Scholastic PFS: Report* Reference Guide.

Modifying a Pre-defined Report

You can modify the design of a pre-defined report. Then you can save the change in your file.

To get ready to modify a pre-defined report, see Getting Started With *Report,* page 6. This tells you the materials you need and how to load the *Report* program.

To begin, the PFS: Report Menu is on the screen. Your *File* data disk is in Drive 1 and your Sortwork disk is in Drive 2.

1. Type 2 to select PRE-DEFINE A REPORT.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. The Pre-defined Reports screen appears.
5. Type the name of the report to be modified.
6. Type **CTRL-C**. The Report Spec form with the present Report Spec names appears.
7. Modify (add, delete, change) the Report Spec form. Use **TAB** and **APPLE-TAB** to move the cursor from one data item to another.
8. Press **CTRL-C**. The modifed report design is saved on the *File* disk. The PFS: Report Menu appears.

For further information on modifying a Report Spec, see page 47 in the *Scholastic PFS: Report* Reference Guide.

Removing a Report Spec

Each *File* data disk can hold up to eight Pre-defined Report Specs. As you finish using a Report Spec, it is a good idea to remove it to make room in your file for new Pre-defined Report Specs.

To get ready to remove a Pre-defined Report Spec, see Getting Started With *Report*, page 6. This tells you the materials you need and how to load the *Report* program.

To begin, the PFS: Report Menu is on the screen. Your *File* data disk is in Drive 1 and your Sortwork disk is in Drive 2.

1. Type 2 to select PRE-DEFINE A REPORT.
2. Press **TAB**.
3. Type the file name of the data disk that is in Drive 1.
4. Press **CTRL-C**. The Pre-defined Reports screen appears.
5. Type the report name to be removed.
6. Press **CTRL-C**. The Report Spec form appears.
7. Press **CTRL-R**. A warning message appears. Read the form carefully to make sure you want to remove it.
8. Press **CTRL-C** to remove the Report Spec or press **RETURN** to keep the Report Spec.
9. The PFS: Report Menu appears.

For further information on removing a Report Spec, see page 47 in the *Scholastic PFS: Report* Reference Guide.

SET NEW HEADINGS

Setting New Headings

Use the SET NEW HEADINGS function to set the column headings for reports. With this function you can save the new headings on your file data disk to use when a report is printed.

If you print without setting new headings, *Report* uses the first line of each data item name as a column heading. Since *Report* determines the width of a column by the widest entry in that column (either the heading or the column entry), changing a heading can sometimes save space on the report.

For example, your data form may include a YEAR BORN item. That's nine characters. The actual years will be only four characters long (for example, 1969). To save space on the printout, you may want to change YEAR BORN on the form to simply BORN on the column heading of the report. The SET NEW HEADINGS function lets you do that. Use this procedure to modify your headings as well.

To get ready to set new headings, see Getting Started With *Report*, page 6. This tells you the materials you need and how to load the *Report* program.

To begin, the PFS: Report Menu is on the screen. Your *File* data disk is in Drive 1 and your Sortwork disk is in Drive 2.

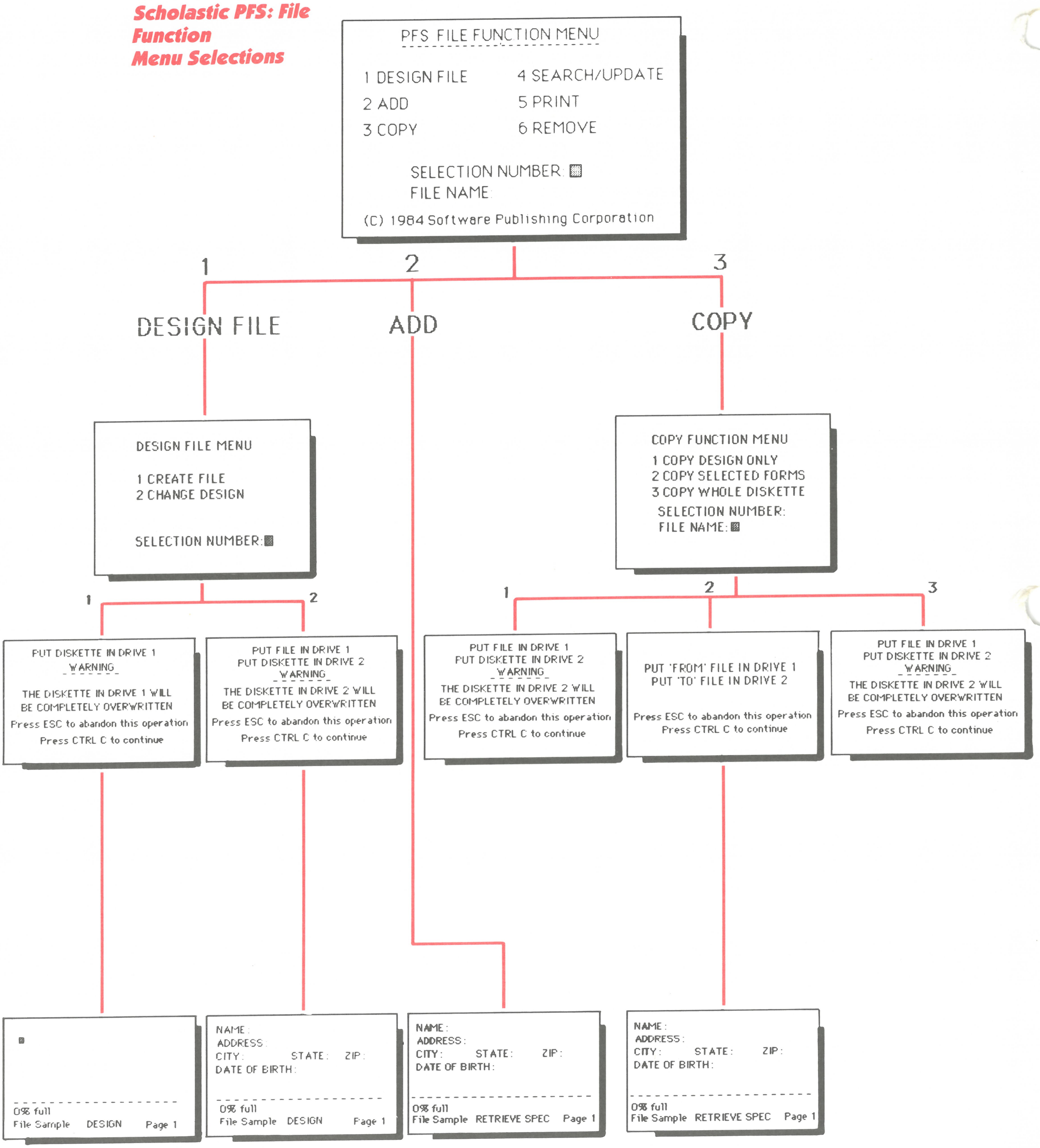
1. Type 3 to select SET NEW HEADINGS.
2. Press **TAB**.
3. Type the name of the file that is in Drive 1.
4. Press **CTRL-C**. A Headings form for that file appears.
5. Press **TAB** and **APPLE-TAB** to move to the data items whose headings you want to change. Use **CTRL-N** and **CTRL-P** to get to data items on the next or previous pages.
6. Next to the data item name, type the heading the way you want it to appear in your report. Use the **DELETE** key to remove any characters you don't want in your report.
7. Press **CTRL-C** when all your headings are the way you want them to be. The PFS: Report Menu will appear on the screen.

For further information on setting new headings, see page 48 in the *Scholastic PFS: Report* Reference Guide.

Scholastic pfs®: U.S. Government Data Bases

Glossary/Appendices

Scholastic PFS: File Function Menu Selections



```
PFS FILE FUNCTION MENU
- - - - - - - - - - - - - - - - -
1 DESIGN FILE        4 SEARCH/UPDATE
2 ADD                5 PRINT
3 COPY               6 REMOVE

      SELECTION NUMBER: ▨
      FILE NAME:

(C) 1984 Software Publishing Corporation
```

```
DESIGN FILE MENU

1 CREATE FILE
2 CHANGE DESIGN

SELECTION NUMBER:▨
```

```
COPY FUNCTION MENU
1 COPY DESIGN ONLY
2 COPY SELECTED FORMS
3 COPY WHOLE DISKETTE
 SELECTION NUMBER:
 FILE NAME:▨
```

```
PUT DISKETTE IN DRIVE 1
_WARNING_

THE DISKETTE IN DRIVE 1 WILL
BE COMPLETELY OVERWRITTEN
Press ESC to abandon this operation
Press CTRL C to continue
```

```
PUT FILE IN DRIVE 1
PUT DISKETTE IN DRIVE 2
_WARNING_
THE DISKETTE IN DRIVE 2 WILL
BE COMPLETELY OVERWRITTEN
Press ESC to abandon this operation
Press CTRL C to continue
```

```
PUT FILE IN DRIVE 1
PUT DISKETTE IN DRIVE 2
_WARNING_
THE DISKETTE IN DRIVE 2 WILL
BE COMPLETELY OVERWRITTEN
Press ESC to abandon this operation
Press CTRL C to continue
```

```
PUT 'FROM' FILE IN DRIVE 1
PUT 'TO' FILE IN DRIVE 2

Press ESC to abandon this operation
Press CTRL C to continue
```

```
PUT FILE IN DRIVE 1
PUT DISKETTE IN DRIVE 2
_WARNING_
THE DISKETTE IN DRIVE 2 WILL
BE COMPLETELY OVERWRITTEN
Press ESC to abandon this operation
Press CTRL C to continue
```

```
▨



- - - - - - - - - - - - - - - -
0% full
File Sample   DESIGN     Page 1
```

```
NAME:
ADDRESS:
CITY:          STATE:   ZIP:
DATE OF BIRTH:

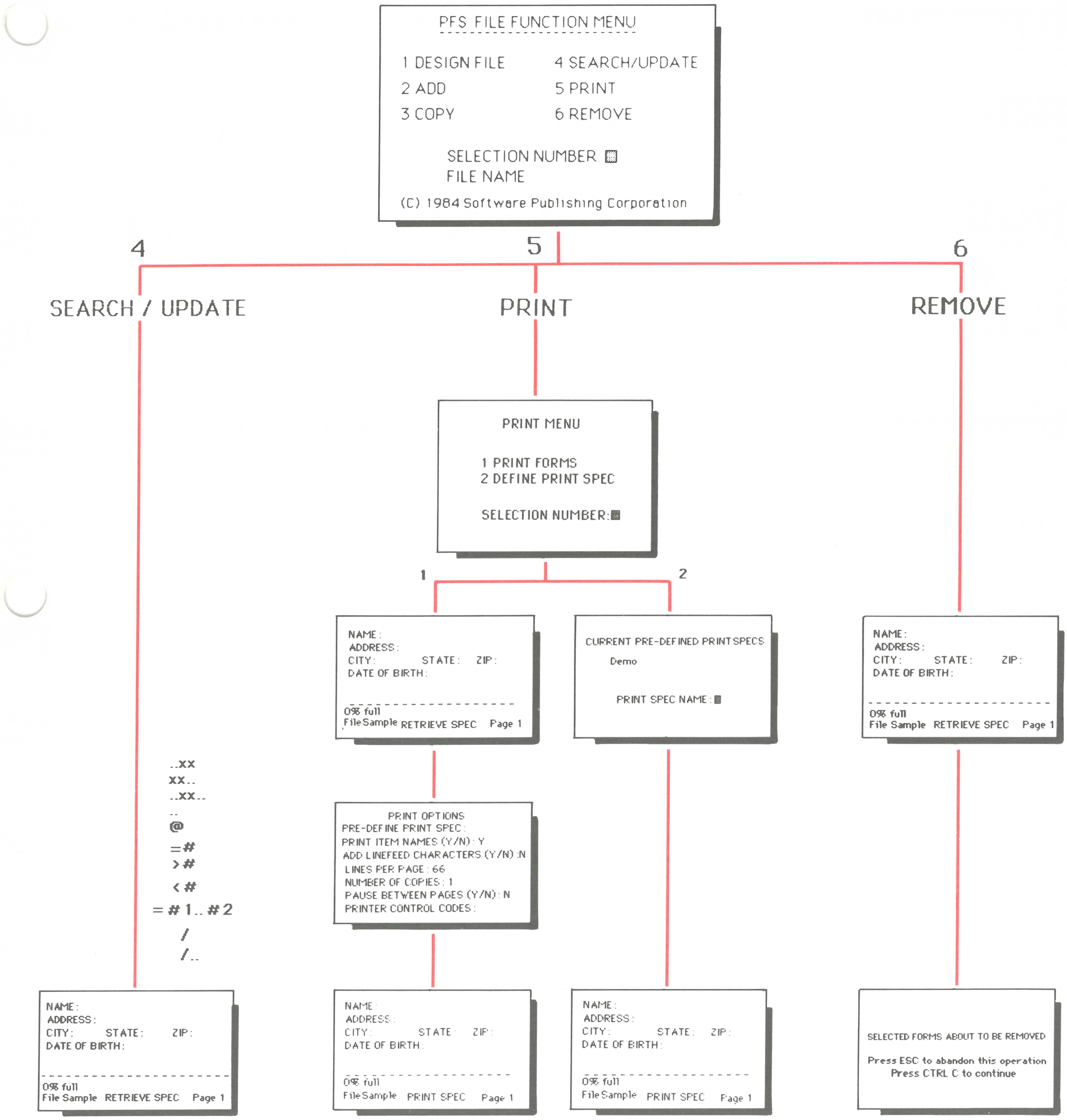
- - - - - - - - - - - - - - - -
0% full
File Sample   DESIGN     Page 1
```

```
NAME:
ADDRESS:
CITY:          STATE:   ZIP:
DATE OF BIRTH:

- - - - - - - - - - - - - - - -
0% full
File Sample  RETRIEVE SPEC  Page 1
```

```
NAME:
ADDRESS:
CITY:          STATE:   ZIP:
DATE OF BIRTH:

- - - - - - - - - - - - - - - -
0% full
File Sample  RETRIEVE SPEC  Page 1
```



```
PFS FILE FUNCTION MENU
-------------------------
1 DESIGN FILE        4 SEARCH/UPDATE
2 ADD                5 PRINT
3 COPY               6 REMOVE

     SELECTION NUMBER ▨
     FILE NAME

(C) 1984 Software Publishing Corporation
```

```
NAME:
ADDRESS:
CITY:          STATE:       ZIP:
DATE OF BIRTH:

------------------------------
0% full
File Sample  RETRIEVE SPEC    Page 1
```

```
PRINT MENU

 1 PRINT FORMS
 2 DEFINE PRINT SPEC

 SELECTION NUMBER:▨
```

```
NAME:
ADDRESS:
CITY:          STATE:    ZIP:
DATE OF BIRTH:

------------------------------
0% full
File Sample RETRIEVE SPEC    Page 1
```

```
PRINT OPTIONS
PRE-DEFINE PRINT SPEC:
PRINT ITEM NAMES (Y/N): Y
ADD LINEFEED CHARACTERS (Y/N):N
LINES PER PAGE: 66
NUMBER OF COPIES: 1
PAUSE BETWEEN PAGES (Y/N): N
PRINTER CONTROL CODES:
```

```
NAME:
ADDRESS:
CITY:          STATE:    ZIP:
DATE OF BIRTH:

------------------------------
0% full
File Sample   PRINT SPEC     Page 1
```

```
CURRENT PRE-DEFINED PRINT SPECS

   Demo

   PRINT SPEC NAME:▨
```

```
NAME:
ADDRESS:
CITY:          STATE:    ZIP:
DATE OF BIRTH:

------------------------------
0% full
File Sample   PRINT SPEC     Page 1
```

```
NAME:
ADDRESS:
CITY:          STATE:       ZIP:
DATE OF BIRTH:

------------------------------
0% full
File Sample  RETRIEVE SPEC    Page 1
```

```
SELECTED FORMS ABOUT TO BE REMOVED

Press ESC to abandon this operation
   Press CTRL C to continue
```

GLOSSARY

BACKUP COPY A disk containing information that is a duplicate of the information on another disk. A backup copy can be made using *File.*

BYTE The space taken up by one character in a computer's memory or in a disk storage area.

CHARACTER A letter, number, or symbol (such as @ or $).

CONTINUOUS-FORM PAPER A continuous length of fanfolded paper with both edges punched for tractor-feeding, and with perforation between pages. There are various sizes and weights.

CONTROL KEY A keyboard key that has been designated to perform a particular function in a computer program. For example, in *File*, **CTRL-C** tells the program to continue. To press **CTRL-C**, hold down the **CTRL** key and press **C** at the same time.

CURSOR The white rectangle displayed on the screen. It indicates where the next keyboard action will occur — typing, deleting, etc.

DATA DISK The disk that stores information. In *File* and *Report,* the data disk contains a data file prepared by the *File* program. Another word for disk is *diskette.*

DATA ITEM The basic element of a form. A data item consists of the item name and a colon, highlighted on the screen in inverse video and followed by an area where the data is to be entered.

DEFAULT VALUE A value that is automatically assigned by the program. This default value is the one that is most commonly used for *File* and *Report.*

DERIVED COLUMN In *Report*, a column that the program calculates based on a formula that is designed by the user.

DISK A removable magnetic recording medium used to store information. Disks can contain programs such as the *File* program or data. Disks should be treated with care. Another word for disk is *diskette.*

DISK DRIVE The part of a computer that ''writes'' and ''reads'' data on a magnetic disk.

DISPLAY SCREEN The screen of your monitor. You can preview a report on your display screen to be sure it is the way you want it to be printed.

80-COLUMN On the Apple *IIe* or IIc, a mode of operating in which 80 characters appear across one line of the screen. 80-column data files can contain twice as much information on each page or form as in the 40-column mode.

ESCAPE KEY In *File* and *Report,* this key causes the program to abandon the current operation and return to the main function menu.

FILE A collection of data forms, stored on a disk. Each form in a file has the same design. In *File,* each disk contains one file.

FORM Any combination of data items arranged in a chosen order and created to store information about one particular thing, person, or subject area. You can create many forms in each file. Each of these forms has the same design. You can store, retrieve, update, and print out these forms.

FORMAT The general layout or arrangement of something, such as the design of a file form, or the specific design of a data item.

FORMAT DISK To prepare a disk to receive data.

FUNCTION In *File,* one of the six choices on the PFS: File Function Menu — DESIGN FILE, ADD, COPY, SEARCH/UPDATE, PRINT, or REMOVE. In *Report,* one of the three choices on the PFS: Report Menu — PRINT A REPORT, PRE-DEFINE A REPORT, or SET NEW HEADINGS.

40-COLUMN On the Apple *II*e or IIc, a mode of operating in which 40 characters appear across one line of the screen. Data files are easier to read on the screen if they are created in 40-column mode.

INTERMEDIATE STORAGE The disks on which computer programs are saved.

INVERSE VIDEO The reverse of the normal display of characters on the computer video monitor. Usually, characters are light on a dark background. In inverse video, the characters are dark on a light background.

KEY WORDS Words that you designate to initiate a search. In *Report*, you can use key words to print a report, sorted alphabetically by key words, with each form appearing once for every key word listed.

LINEFEED CHARACTER A code that tells a printer to advance the paper one line. It is like a carriage return on a typewriter. Some printers insert their own linefeed characters automatically; others need to receive the linefeed character from the computer program.

LOAD The process of transferring a program from a disk into the computer's memory.

MENU The list of functions, or operations, that you can choose at a given time. The PFS: File Function Menu or the PFS: Report Menu appears when you start up one of the programs, or when you press the **ESC** key at any time while using the programs.

MONITOR A device that displays information and instructions to the person using a computer program. Most monitors look like a television set, but do not receive broadcast signals. Monitors can have color or monochrome displays.

MONOCHROME Having a single color (usually black and white, but can be some other color). Usually refers to the monitor screen. A monochrome display device does not display other colors. Data files are easier to read on the screen with a monochrome monitor.

NUMERIC DATA In *Report,* data to be treated as numeric is specified in the Report Spec with the code N. In numeric data, *Report* ignores all characters except −, +, 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. *Report* treats numeric data items differently from nonnumeric data. *File* does not distinguish between numeric and nonnumeric data items.

OVERWRITTEN When you make a computer disk ready for storing data, if there is data already stored on the disk, it will be erased, or overwritten.

PAGE In *File,* a form can contain up to 31 pages of data. A page is equivalent to one screen and contains 22 lines. In *Report,* a page is equivalent to a printed piece of paper, usually 66 lines long.

PAGE BREAK In *Report,* use page break to start a new page each time the entry in column 1 changes.

PAGE WIDTH The number of characters that can be printed across a page of paper. In *Report,* the default is 80 characters.

PARTIAL ITEM MATCH On a Retrieve Spec, the use of .. (dot dot) or @ (wild card) to tell the *File* or *Report* program to ignore the specified characters in the data when selecting forms for retrieval.

PFS: FILE A program that is used to store and retrieve information.

PFS: REPORT A program that is used to print reports from information found in a *File* data file.

PHOTOCOPY A paper copy made from an original using a photocopying machine.

PRINT SPEC In *File,* a filled-in form that contains codes that specify the data items to print. In addition, *Report* allows you to arrange the data items on the printout.

PRINT SPEC CODE A character signifying a specific manner of printing a form. In *File,* these codes include ×, +, S, and T. In *Report,* numbers and derived columns are used as well.

PRINTER DEVICE In *Report,* an option that tells the program where to display a report on the display screen (D) or on the printer (P).

PRINTER CONTROL CODES Decimal codes that give instructions to the printer, to control such things as vertical spacing or type style. The codes are different for different makes and models of printers. Information about these codes should be in your printer manual. You can insert the codes in the Print Options Menu of *File* or the Report Options Menu of *Report.*

PRINTOUT A list of data printed out on paper. You can design your printouts with *File* and *Report.*

PROGRAM DISK A disk that contains a program that puts the resources of the computer to use for some specific purpose or task, such as word processing, data base management, etc. The disks that hold *File* and *Report* are program disks.

PROMPT A computer message that appears on the display screen to tell the user what to do.

REFORMAT To prepare a used disk for reuse.

RETRIEVE SPEC A form used to specify which data you want to retrieve from the file.

SCREEN The face of a monitor on which visual or graphic material is displayed.

SINGLE SHEET PAPER Single sheets of paper that are individually fed into a printer.

SORT To put data in alphabetical or numeric order.

SORTWORK FILE *Report* needs to use a file called Sortwork for temporary storage while it sorts information from a file and prepares a report.

SPEC The *PFS* abbreviation for ''specification.''

TRUNCATE In *Report,* if you attempt to print a line of data that is too wide for your printer, you might truncate your report. This means that any characters that do not fit on the line will be left out of your report.

WRITE-PROTECT TAB A small strip of tape that covers the notch on the side of a disk. No information can be written on the disk as long as the write-protect tab covers the notch.

APPENDIX A: ERROR MESSAGES AND TROUBLESHOOTING

Error Messages

An error message appears on your screen if you make a mistake using the program or if there are problems with parts of your computer system or disks.

The messages are usually displayed at the bottom of the screen, but sometimes they take up the whole screen.

When you get an error message, look it up in the list below and follow the instructions for corrective action. To go on with your work, press **ESC** to get the PFS: File Function Menu on the screen.

Following is a list of *File* messages, arranged in alphabetical order:

Message	**Description**	**Corrective Action**
CAN'T FIND FILE	*File* cannot find the PFS file specified in the File Name item of the PFS: File Function Menu in either Drive 1 or Drive 2.	Check to make sure you typed the name of the file correctly in the File Name item and that the corresponding disk is properly inserted in Drive 1 or Drive 2. (Pull disk out and reinsert.)
CAN'T FIND PRINT SPEC	*File* cannot find a pre-defined print spec with the name entered in the Print Spec Name item.	Check to make sure you have typed the print spec name correctly. Check to make sure the print spec name is listed on the pre-defined print specs form.
DISKETTE FULL	*File* attempted to write some information on a disk and found that there was no room left.	If you have some unnecessary forms in the file, you can create some space by removing them (see Chapter 6). You can also use the COPY function to copy the form design from the current file to a second file, then continue adding information to that new file.
DISKETTE IS WRITE-PROTECTED	*File* cannot use disks that are write-protected. *File* uses certain areas of the disks to store temporary information, even when you select a retrieve function.	If you are working with a disk that is write-protected (the Books data disk that is included in *Scholastic PFS: File* is write-protected), use the COPY function to make a copy of the whole disk. You can use this copy for your *File* activities. Remove the write-protect tab. To protect the information that could now be overwritten, use the COPY function to make a backup copy of your file.

FILE NAMES CAN HAVE ONLY 8 CHARACTERS	You entered a name with too many characters in either the File Name item of the PFS: File Function Menu or the New File Name item of the Copy Menu.	Retype a file name with eight or fewer characters.

Message	**Description**	**Corrective Action**
FILE REQUIRES 80-COLUMN TEXT CARD	The file you have specified in the File Name item is in 80-column format and your Apple *II*e computer does not have an 80-column text card installed.	If you have an 80-column text card, install it in your Apple *II*e computer. Otherwise, you cannot use this file.
'FROM' FILE MUST BE IN DRIVE 1	*File* always copies from the disk in Drive 1 to the disk in Drive 2. *File* checked and found the wrong disk in Drive 1.	Check to make sure that you typed the name of the file you want to copy in the File Name item and that the corresponding disk is properly inserted in Drive 1. (Pull disk out and reinsert.)
INVALID SELECTION NUMBER, RE-ENTER	You typed a number for the Selection Number item of a menu that is invalid.	Retype a number that is shown on the menu.
I/O ERROR	There is a physical problem with either the disk drive, the disk controller, or the disk. Some possible causes are:	
	Dirty head.	If the disk drive has been in use for some time, the head may need cleaning. See your disk drive manual.
	Disk drive door open.	Close the door.
	Disk inserted incorrectly.	Remove the disk, then reinsert it properly.
	Malfunction.	DO NOT USE THIS DISK AGAIN. First, make a copy of your back-up disk, then use that and re-enter any necessary information. If I/O ERROR persists, take the disk drive to your dealer for testing.
	Worn out disk.	After 40-50 hours of use, the disk may need replacing. Try using a different disk.
MUST GIVE A FILE NAME	You did not type a name in the File Name item of the PFS: File Function Menu.	Type the name of the file you want to use.
	You did not type a name in the New File Name item of the Copy Function Menu.	

Message	Description	Corrective Action
MUST GIVE A PRINT SPEC NAME	You have tried to define a print spec without giving it a name.	Type a name from one to eight characters. When defining a print spec, you must give it a name.
ONLY 4 PAGES CAN BE CHANGED	You have tried to change the form design on more than four pages of the form at one time.	Complete the Change Design process for no more than four pages of a form design at one time. Repeat the process for each additional four pages.
ONLY 8 PRINT SPECS ARE ALLOWED	You have already defined eight print specifications for the file.	Remove an existing print spec using CTRL-R, then define the new one.
PRINT SPECS CAN HAVE ONLY 8 CHARACTERS	Your print spec name is too long.	Retype a print spec name with eight or fewer characters.
SEARCH LIST TOO LONG	The retrieve specifications will not fit in *File*'s internal storage space.	Specify fewer requests in the retrieve specifications.
'TO' FILE MUST BE IN DRIVE 2	*File* always copies from the disk in Drive 1 to the disk in Drive 2. In the Copy Selected Forms option of COPY, *File* checked and found the wrong disk in Drive 2.	Check to make sure that you typed the correct name in the New File Name of the Copy Function Menu, and that the corresponding disk is inserted in Drive 2.
TOO MANY CHARACTERS	All information is over-printed on the same line.	Type Y over the N in the Add Linefeed Characters item on the Print Options screen.

Troubleshooting

There may be a time when you run into a problem and there is no error message to help. Here is a list of common problems and corrective actions that might help.

Problem: The screen is blank when you start up the *File* program.

Possible solution: Turn on the monitor.

Problem: The *File* program won't start up.

Possible solution: Open the door to Drive 1. Take the disk out. Look at the label to make sure it's the *File* program disk. Put the disk back in. Close the door. Try again.

If that doesn't work, try starting the program on another computer to see if the problem is with the program disk or the computer system. If you find the program will start up on another computer, then your problem is with the original computer.

Problem: One or more blank forms has accidentally been stored in a file.

Solution: Use the SEARCH/UPDATE function to get the blank form on your screen. When the blank form is on your screen, press **CTRL-R** to remove it from the file.

Problem: Can't retrieve forms from a file, except with an exact match in the first data item.

This problem can arise if someone has previously removed the data disk from the disk drive in the middle of an ADD operation. The preferred solution to this problem is to find your backup copy of the file disk and use it instead of the damaged copy. If no backup exists, the following procedure can be used to recover the file (*NOTE: This procedure requires two disk drives.*):

1. To copy the design of the file onto a new blank disk, use the Copy Design Only option of the COPY function.
2. Use the Copy Selected Forms option to copy each form, one by one, from the original file to the new file. You must select the forms one by one, with an exact match retrieve spec in the first data item. This can take an hour or more, depending on how many forms are in the file.

Problem: On a printout, only a few lines of data are printing on each separate page of paper.

Solution: See the PRINT function for instructions on how to set up the Print Options Menu, Lines Per Page: option.

APPENDIX B

Disk Storage Capacity

Each *File* data disk can hold one file that contains a certain number of forms. The total number of forms that can be stored on one disk is determined by the amount of data to be stored on each form and the number of data item names. This total is the disk storage capacity. For example, an average mailing label would allow about 500 forms per file.

To determine disk storage capacity, you need to know how many blocks (a unit of space on a disk) each form in your file uses. There are 128 bytes (characters or spaces) per block. Some of these are used to store the blank form, directory information, and other internal *File* data structures. One thousand of these 128-byte blocks can be used to store data.

In planning a file, you may want to know the number of forms that will fit into it. This can be helpful if you plan to make a data base that requires several volumes of a file.

For example, suppose a school librarian wanted to catalog all of the books using *File*. She has 4,000 books that she would like to organize by the authors' last names. Before she starts, she would like to know how many book forms will fit into each file, and thus, how many files she will need in all.

The librarian can follow the formula for disk storage capacity described in this appendix. See the example below.

The 10-Step Formula

This 10-step formula will tell you how many forms will fit into one of your files. To do this, you will determine how many blocks your form uses.

Each page of every form stored in a file uses at least one block. If each form stored in a file is only one page and that page does not total more than 128 bytes, a file holds approximately 1,000 forms. The actual number of forms that you can fit into one of your files is determined by the amount of data actually written in each individual form.

Steps 1 through 8 help you estimate how many blocks are used by a page of a form. Step 9 tells you what to do if your form is more than one page long. Then, Step 10 tells you the approximate number of forms that can fit into your file.

Begin with a written draft of a sample form or a form on the screen. Be sure this sample form has at least the average amount of data in it.

1. *File* uses the first 14 bytes of every page. So far, 14 is your total.

2. Each data item name on a page uses five bytes. Multiply the number of data items on a page by five. Add this product to your total.

3. Each character in a data item takes one byte. Count all the characters on the page and add this sum to your total.

4. Each single blank space in a filled-in data item takes one byte, but no blank is counted at the beginning or end of an item. Count the spaces on your page and add this sum to your total.

5. A string of three or more blank spaces inside a filled-in item takes three bytes. If you have data with these multiple spaces, add this sum to your total.

6. A blank data item takes one byte (in addition to the five bytes described in Step 2). If you have any blank data items, add this sum to your total.

7. Divide the total number of bytes for a page by 128.

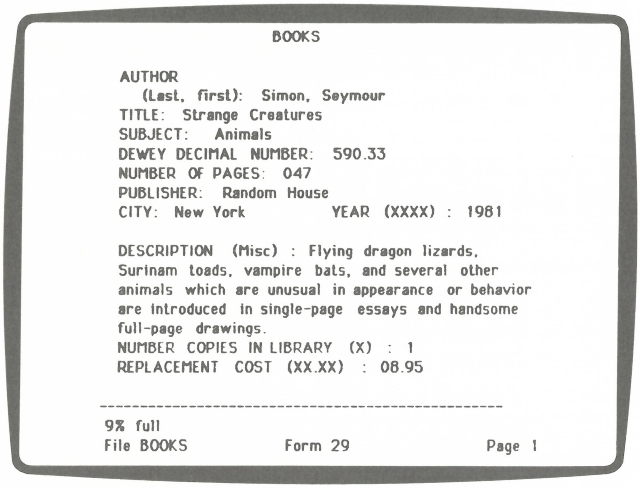
8. This quotient will probably be a decimal number. Round it up to the next largest integer. This number tells you the amount of blocks used by that page of your form.

9. If your form is only one page long, go to Step 10. Otherwise, repeat Steps 1 through 8 for each additional page in your form. Add the number of blocks determined in Step 8 together to give you the total number of blocks required for an average form.

10. Divide 1,000 by the total number of blocks required by one form (the sum of Step 9) to arrive at the approximate number of forms you can fit into your file.

Example

The school librarian described above will follow the 10-step formula. She will use the sample form below to estimate the number of similar forms she can fit into her books file. This is a one-page form.



```
                        BOOKS

    AUTHOR
       (Last, first):  Simon, Seymour
    TITLE:  Strange Creatures
    SUBJECT:   Animals
    DEWEY DECIMAL NUMBER:  590.33
    NUMBER OF PAGES:  047
    PUBLISHER:  Random House
    CITY:  New York           YEAR (XXXX) : 1981

    DESCRIPTION  (Misc) : Flying dragon lizards,
    Surinam toads, vampire bats, and several other
    animals which are unusual in appearance or behavior
    are introduced in single-page essays and handsome
    full-page drawings.
    NUMBER COPIES IN LIBRARY  (X)  : 1
    REPLACEMENT  COST  (XX.XX)  : 08.95

  --------------------------------------------------
  9% full
  File BOOKS             Form 29                 Page 1
```

1. *File* uses the first 14 bytes on a page. 14

2. Eleven data items using five bytes each. 55

3–4. Additional bytes used by this form.

Data Item	**Characters + Spaces**
Simon, Seymour	13 + 1 = 14
Strange Creatures	16 + 1 = 17
Animals	7 + 0 = 7
590.33	6 + 0 = 6
047	3 + 0 = 3
Random House	11 + 1 = 12
New York	7 + 1 = 8
1981	4 + 0 = 4

Flying dragon lizards, Surinam toads, vampire bats, and
several other animals which are unusual in appearance
or behavior are introduced in single-page essays
and handsome full-page drawings.
1
08.95

165 + 26 = 191
1 + 0 = 1
4 + 0 = 4

5. There are no multiple blank spaces in this form. 0

6. There are no blank data items in this form. 0
Total number of bytes used by this completed form. 336

7. The total number of bytes for the page divided by 128. $336 \div 128 = 2.625$

8. Round 2.625 up to the next largest integer. This page requires three storage blocks. 3

9. Since this form requires only one page, there is nothing to add to the three.
This form requires three storage blocks. 3

10. Since one form requires three storage blocks, you can fit approximately 333 forms in one file. $1000 \div 3 = 333$

So, since the librarian has 4,000 books, she will divide 4,000 by 333, the number of forms that will fit into each file. This quotient is approximately 12. Since she will need 12 files for the 26 letters of the alphabet, the librarian now knows to divide the books into 12 approximately equal sections.

MADISON LIBRARY
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